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Contributions to the A. Ph. A. Headquarters have been suggested as Holiday Gifts, and as—A New Year's Resolution—to Lay the Foundation of the Building, in 1925.

Vol. XIII, No. 12 **DECEMBER, 1924**

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THE SEVENTY-THIRD ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN DES MOINES, IA., DURING THE WEEK OF AUGUST 31, 1925

The 1925 meetings of the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy will also be held in Des Moines, during the week of August 31, 1925.

Association Roster will again be printed on page x of the January number.

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FRANK R. PETERSON

PORTLAND, OREGON

President of National Association of Retail Druggists
1924–1925

F. R. PETERSON.

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. XIII DECEMBER, 1924 No. 12

FRANK R. PETERSON.

The election of Frank R. Peterson, of Portland, Ore., to the presidency of the National Association of Retail Druggists, has gained for him a high honor and has acted as a stimulus to the profession of pharmacy west of the Rocky Mountains in national pharmaceutical organizations. He has always been interested in civic affairs but more especially in national, state and local pharmaceutical organizations. Because of his dependableness and interest in the affairs of the Oregon State Pharmaceutical Association he has held many important offices in the association. It was primarily through his efforts that the Oregon state association decided to employ a paid secretary. He has been president of the Portland Retail Druggists' Association and during his term of office he created a spirit of coöperation among Portland druggists, and assisted in defeating many bills adverse to the drug business in the state legislature. His efforts contributed largely to the establishment of a price book, that has done much to stabilize the prices of drug commodities in Oregon.

Mr. Peterson has for many years attended the annual conventions of the National Association of Retail Druggists. Because of his familiarity with matters relating to legislation and the soundness of his judgment he was appointed to many important committees of the association. In 1923 he was elected first vice-president and in 1924 to the important position of president. His preparation for the high office he now holds has been adequate and ideal.

In appreciation of the honor that Mr. Peterson brought to the profession of pharmacy in Oregon, prominent druggists and professional men tendered him an elaborate banquet upon his return from Washington, D. C., one of the most important pharmaceutical functions in the history of pharmacy in Oregon; there was a record attendance of druggists from all parts of the state and representatives were present from all professional state associations. The principal speaker of the evening was Mayor Baker of Portland, who being familiar with the drug business showed the significance of Mr. Peterson's election, as president of the N. A. R. D., to Portland and to the state of Oregon. Other banquets in honor of Mr. Peterson have been arranged for in other cities on the Pacific Coast.

Mr. Peterson was born at Owatonna, Minn., in 1869. He received his preliminary pharmaceutical training in drug stores of Minneapolis and nearby cities. Because of his health he was obliged to leave Minnesota and, in 1901, took up his residence for a few years in the Black Hill country of South Dakota. In 1909 he started the Lents Pharmacy, in Portland, and this business has expanded so that it is now one of the largest and most successful retail establishments on the Pacific Coast. He has grown into the social, business and professional life of Portland, and is one of its highly esteemed citizens.

A. ZIEFLE.

EDITORIAL

E. G. EBERLE, EDITOR 253 Bourse Bldg., PHILADELPHIA

CHRISTMAS SPIRIT AND NEW YEAR HOPES.

"THE Christmas spirit overcomes moroseness and selfishness, dispels sadness and doubt, displaces peevishness and fretfulness, and creates joy by doing, strengthens faith by service and sacrifice"—its resources and results have related bounds.

The Red Cross, the Christmas Seals, the Crippled Children's Hospitals, involving no question of creed, color and nationality, are expressions of the Christmas Spirit, of gratitude and happiness. The part of each individual is small, but the aggregate result is great and impresses the value of coördinated coöperation.

It has become an established custom at this season of the year to give comfort and joy to those who are near and dear to us, and aid promotions that concern us or in which we have an interest. In the latter connection may we not have pharmacy in mind, the American Pharmaceutical Association, its mission and present endeavor to render greater service to pharmacy and all served thereby? May all share bountifully in Christmas joys and in the opportunities for doing good. "It's the smiles that we give and the help we bestow that fashion earth's joy as the days come and go."

LOOKING INTO THE NEXT YEAR.

The late Harry Lee Mariner, of the Dallas News, wrote these lines:

The world is full of joyous things for mankind, but alas,
Each bears imaginary signs that read 'Keep off the Grass;'
We look across the fence and see green pastures rolling wide,
And view that sign that says that we must keep our feet outside.

Wherefore we view with longing eyes, and eager outstreched hand
The vision just across the fence, attractive, rich and grand,
That maybe is not near so good as that we have and hold,
But which, through prohibition, is as precious as is gold.

We are prone to view the opportunities of other activities as more promising, but proper search and endeavor reveal that the "acres of diamonds" are where we concentrate our well-directed efforts. Whatever the passing year may have been, a new year is expressive of hope, which, according to Jeremy Collier, "is a vigorous principle; it is furnished with light and heat to advise and execute; it sets the head and heart to work, and animates a man to do his utmost. And thus, by perpetually pushing and assurance, it puts a difficulty out of countenance, and makes a seeming impossibility give way." The quotation is given because pharmacy has, through persistent efforts of its votaries, accomplished encouraging results.

While by comparison with an average record the passing year will not suffer, we are hopeful that the encouraging progress made by pharmacy will gain strength, and the promotions of the American Pharmaceutical Association may prove their usefulness, and that the Headquarters' project will become an accomplishment in 1925.

Even though we realize that sorrows and gladness, health and sickness, success and failure, checker the lives of all, it is a pleasing custom, emphasizing the brotherhood of man, to extend wishes for a Happy New Year, and in this, by encouragement and comforting words, we may have a part. E. G. E.

THE VALUE OF THE HISTORY OF PHARMACY AND THE A. PH. A. HEADQUARTERS MUSEUM AND LIBRARY.

PRESIDENT Cheney, of the American Historical Association, in his annual address, attempted to lay down a number of fundamentals or laws applying to history; he named the law of continuity—the impossibility of any sudden break with the past; the law of impermanence—the inevitable rise, growth, and decline of social groups or nations; the law of interdependence—that no part of the human race can progress by the injury of another; the law of democracy—the tendency for all government to come under the control of all the people; the law of necessity for free human consent; and the law of moral progress—the slow but measurable increase in the influence of morals upon human affairs. The foregoing have been taken from an article on "Historic Determinism and the Individual" by James Truslow Adams in the October *Atlantic Monthly*.

The laws stated may be studied in connection with the history of pharmacy—we look through the records and find the continuity which links pharmacy of to-day with that of the past; during each period that which has failed to prove its value has been discarded, but there remains a connecting link, however worn it may be. The rise, growth and decline of social groups have marked the progress of pharmacy. The law of interdependence applies to arts and professions as well as nations, and this persuades us to say frequently that the people have a right to demand a service from the united endeavor of pharmacy, medicine, dentistry, and chemistry. Professions are useful to the world not only in proportion to the attainments of the votaries but their coöperation with one another—they cannot progress by hindrance nor by doing injury. The law of moral progress applies to pharmacy and has been influential in all periods and effective to-day. It is for us to provide the records for pharmacy.

Only to-day the writer was asked for historical information that is contained in the volume on the life of Dr. Lyman Spalding, the "father" of the U. S. Pharmacopœia. A desire to know if the name of Lyman Spalding was mentioned in a well-known Cyclopedia resulted in not finding even a brief sketch—a serious omission—few books have a greater significance than the U. S. Pharmacopœia. It is our duty to see that such names as the one mentioned, of Charles Rice, C. Lewis Diehl, William Procter, Jr., Joseph Price Remington, Albert E. Ebert, etc., etc., are included in reference books used daily by a large number.

The purpose of this comment is also to impress the value of the Historical Museum and Library which is to be part of the A. Ph. A. Headquarters, and as a reminder to pharmacists in all of the pharmaceutical activities—retail, wholesale, manufacturing, publishing, teaching, etc.—that matter of historical value should be preserved and held for the time when the Headquarters will be established, which will be in the not very distant future. Notes and exact references, as far as possible, should accompany these contributions.

It is to be assumed that the Library will contain modern and historical volumes, prints, photographs, paintings, and complete files of publications; in other words, be a useful research and reference library that will give a distinctive service to all engaged in pharmacy. A *will to do* will hasten the day of realization. E. G. E.

VOCATIONAL TRAINING AND EDUCATION.

DEAN Jacob Diner was one of the speakers at the November meeting of the New York Branch of the American Pharmaceutical Association, discussing "Higher Educational Requirements." At the conclusion of his remarks he suggested post-graduate courses for pharmacists. The suggestion is good, not only for the study of pharmaceutical progress and additions to the Pharmacopœia, but for study of business subjects as well.

At intervals medical practitioners, surgeons and dentists go back to the class rooms, the clinic and lecture halls, to receive the benefit of later science in surgery and dentistry or the general or special practice of medicine.

The wholesalers consider the services of the Harvard University of Business Research well worth the expense; conferences with insurance companies for the discussion of insurance problems have reduced the premiums and fire losses; all other phases of the business receive consideration and, as a result, the overhead, which, due to real estate advances, increased taxes, higher living costs and salaries, would have soared, is held in reasonable check.

That the related professions and business interests can realize the value of postgraduate work, or what may be so termed, should suggest related lines of thought for pharmacists. The institutions from which pharmacists received their credentials have improved their facilities and will welcome their sons and daughters so they can give them information, enabling them to serve the public better and also their own business and professional interests. Every once in a while we learn of a pharmacist who has returned to school or college for a laboratory course that will fit him for corresponding work. We have a number of pharmacists in mind who, in recent years, have made such changes in their professional activities. There are others who have studied business methods and successfully applied them in their stores.

Business experience and study give to those who apply themselves a broad education not only of their particular calling but of all activities; development results from contact, observation and study, and employing wisely the perspectives of others with their own and adapting their serviceable ideas.

Not only are all branches of the same industry related but there is some point of contact that evidences a common interest of all activities for general and individual advantage. It is as necessary for the votaries to know the business details and practical side of their calling as for them to possess a broad and liberal culture that will enable them to think right, act well, and live a useful life.

This writer stated in an editorial of December, 1922, p. 994, that the situation as far as pharmacy is concerned is somewhat different from that of other professions; relatively more information can be gained for the pharmacists' application from books and other publications than is possible for surgeons, physicians and den-

tists through their publications, because observation is of great importance; and the pharmacy owner can employ men and women who have had later opportunities in schools. It is possible, however, for a greater number to utilize colleges and schools, the A. Ph. A. branches, local, state and national organizations to a larger extent for reëducation in pharmacy.

Wholesale houses of the larger cities, where colleges of pharmacy are located, can, probably, make arrangements for certain of their employees to receive training for their work and with this a better understanding of the ideals of pharmacy—a knowledge of the drugs, chemicals and sundries they handle, their sources, properties, preservation, etc. Such a course for employees of wholesale houses was instituted several years ago in Paris and the director was at that time, and may still be, our honorary member, Professor Emilé Perrot. Many a wholesale house would have profited by a training of this kind of certain of their employees, salesmen and others. This training should be built upon the foundation of a good school education. E. G. E.

THE CRAMTON-STERLING BILL.

No evidence so far brought forward has taken away force of argument against the measure; in fact, the organizations of the drug trade stand as a unit against the bill which is now on the Senate Calendar as the Sterling Bill, No. 3422; it is the Cramton Bill of the House, No. 6645. Pharmacists, druggists and manufacturers in related lines should continue their efforts in opposition to the bill, which carries the ear marks of opposition to all alcohol manufacture, use and sale, without regard for its necessity, and an opposition that seemingly seeks largely the gratification of carrying a point and blinds itself to what this may mean to the sick, science, manufacturers, commerce, etc.

This is written before the meeting of the National Drug Trade Conference—call for which has been made by President Henry, for December 3. This was the first organization to oppose the measure, and its opposition was frankly stated to Representative Cramton and General Counsel Wayne B. Wheeler, of the Anti-Saloon League.

The points of the bill and the opposition by individuals and organizations have been frequently stated in the JOURNAL in the reports of various associations; never has there been greater unanimity of action by these organizations, and their conclusions have been reached after most careful consideration.

The *N. A. R. D. Journal* presents a forceful argument along with others of equal or greater weight in the following:

"The attempt to stampede the senate in favor of this bill by raising the false alarm of 'wet' and 'dry,' as was done in the House, can only be regarded as a resort to the use of a subterfuge of the lowest type, for this is not in any sense a battle between the 'wets' and the 'drys,' but a clear-cut issue between a solid group of experienced business men, on the one hand, as against a small group of inexperienced though powerful theorists upon the other."

A bulletin of the N. W. D. A. on the subject presents the argument in this way: "The Cramton bill does not present an issue between the 'wets' and the 'drys.' The only question involved is whether the great industries of the country which use alcohol as a chemical raw material shall continue to obtain their supplies from the experienced and businesslike officials of the Internal Revenue Bureau, who are in sympathy with industrial progress, or shall be forced to look for their alcohol, etc., to the officials of the Prohibition Unit engaged in policing law violators and who seem to have great difficulty in differentiating between honest business men and potential bootleggers."

PAPER NO. 2. THE STANDARDIZATION AND STABILIZATION OF ACONITE PREPARATIONS.*

BY EDWARD E. SWANSON.

I. Review of previous data.
II. Reassay of aconite preparations.
III. The alkaloids of aconitum napellus.
IV. The hydrogen ion concentration factor.
V. Conclusions.

I. REVIEW OF PREVIOUS DATA.

In a previous article (1), it was shown that the chemical method of the U. S. Pharmacopœia IX revision is not reliable for standardizing aconite preparations. This method assays the total ether-soluble alkaloids, which are similar in chemical properties toward solvents and precipitants, but not similar in toxicity and pharmacological action. The biochemical method, which has been found to be more accurate, determines the total amount of toxic alkaloids in terms of a standard aconitine, which is regarded pharmacologically and therapeutically as the important alkaloid. However, its efficiency not only depends upon the *aconitine value*, but also upon a standard method of *technic*. The accuracy of the method depends upon a standard weight of guinea-pigs, the seasonal variation of guinea-pigs, the acclimation of guinea-pigs to laboratory surroundings, the standardization of various lots of guinea-pigs, the use of starved or non-starved guinea-pigs, the dilution of the preparations to be tested, and finally the amount to be injected. These factors, or problems, are now under investigation and will be reported in another article.

A comparison of the chemical and biochemical methods on a number of aconite drugs, tinctures and fluidextracts not only shows that the chemical method is unreliable, but also that the tinctures and fluidextracts deteriorate rapidly within a year; and furthermore that this loss in activity can be partially or totally prevented by the addition of acetic acid, or hydrochloric acid, in the finished percolate or menstruum. The preparations were assayed during the year and at the end of the year. The writer has reported the results of one, two, and two and one-half years' aging, and now reports the results of three or more years' aging.

To briefly summarize the previous reported data:

Tinctures 1, 4 and 7, prepared according to the U. S. P. method, deteriorated rapidly in one year's time as follows:

Preparation.	Date.	Per cent. Bio-assay.	Date retested.	Per cent. Bio-assay.
Tincture 1	11/20/20	181	11/28/21	13
Tincture 4	11/20/20	333	11/28/21	43.6
Tincture 7	6/12/21	100	11/28/21	12

Tinctures 2, 5 and 8, prepared according to the U. S. P. method with 2% acetic acid, or 0.1% hydrochloric acid added to the finished percolate, assayed as follows:

Preparation.	Date.	Per cent. Bio-assay.	Date retested.	Per cent. Bio-assay.
Tincture 2	11/20/20	181	12/25/22	93
Tincture 5	11/20/20	333	12/25/22	266
Tincture 8	6/12/21	128	12/25/22	114

* Scientific Section, A. Ph. A., Buffalo meeting, 1924.

The tinctures 3 and 6, prepared with a 2% acetic acid 70% alcoholic menstruum, showed even less deterioration, if any, as follows:

Preparation.	Date.	Per cent. Bio-assay.	Date retested.	Per cent. Bio-assay.
Tincture 3	11/20/20	166	12/25/22	166
Tincture 6	11/20/20	335	12/25/22	333

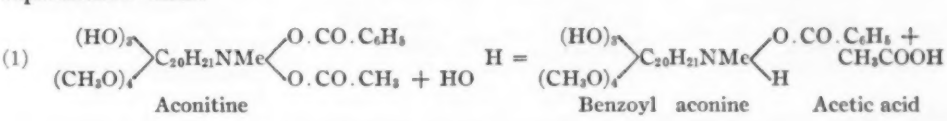
II. REASSAY OF THE SAME PREPARATIONS.

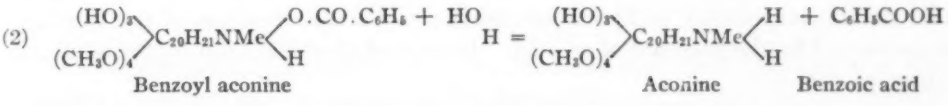
Preparation.	Date.	Per cent. Bio-assay.	Date retested.	Per cent. Bio-assay.
Tincture 2	11/20/20	181	11/ 2/23	94
Tincture 5	11/20/20	333	11/20/23	228
Tincture 8	6/12/21	128	11/ 2/23	94
Tincture 3	11/20/20	166	11/15/23	160
			6/18/24	150
Tincture 6	12/20/20	335	11/29/23	320
			6/10/24	310

The above data shows that tinctures 2, 5 and 8, prepared with 70% alcohol and acid added to the finished percolate, have either retained or are gradually deteriorating, while the tinctures 3 and 6, prepared with an acid alcohol menstruum, seem to have retained their activity.

III. ALKALOIDS OF ACONITUM NAPELLUS.

The alkaloidal content of *Aconitum Napellus* was first studied by Geiger and Hesse (2) and Von Planta. (3) However, Grove (4) was the first to obtain a crystalline form. Wright (5) and his pupils prepared several salts and studied their properties. Dunstan (6) and his collaborators, and Freund (7) and his pupils, found that the principal alkaloids of *Aconitum Napellus* are (1) aconitine the principal alkaloid, (2) benzoyl aconine and (3) aconine. The alkaloid aconitine contains four methoxyl groups and a methyl group linked to a nitrogen atom. By heating aconitine in an aqueous solution under pressure it undergoes hydrolysis, forming first acetic acid and benzoyl aconine, which occurs in the aconite root, and eventually benzoic acid and aconine, which also occurs as such in the plant. These reactions may be represented thus:





The aconite alkaloids undergo decomposition, especially hydrolysis, with remarkable ease. Dunstan and Ince (8) found that the pure crystalline aconitine, when heated to its melting point, was completely decomposed, but was not affected by exposure to a temperature of 100–120° for one hour. Wright and Luff (5) and Dunstan and Carr (9) have shown that aconitine is completely decomposed into benzoyl aconine and aconine by prolonged heating with water in a closed tube at

100° C. Also, that if the alkaloid is dissolved in an alkaline water solution in closed tubes the decomposition is even more rapid, forming acetic acid, benzoic acid and aconine; and finally that the alkaloids dissolved in an alkaline alcoholic solution decompose rapidly. Dunstan and Carr(10) found that the hydrolysis of aconitine may be affected by heating with H_2O_2, forming acetic acid and benzoyl aconine, and completing the reaction to benzoic acid and aconine by heating with aqueous alkali or strong acids. Therefore, partial hydrolysis forms benzoyl aconine, and complete hydrolysis forms aconine. Swanson and Walters(1) have shown that aconitine crystals dissolved in 70% alcohol decomposes very rapidly at room temperature.

Considering the above review of the literature, the deterioration of aconite preparations may be due to hydrolysis or a chemical change of aconitine into benzoyl aconine and aconine. In order to study the problem more closely the writer has prepared solutions of the alkaloids aconitine, benzoyl aconine and aconine (obtained through the courtesy of Dr. A. R. L. Dohme and Dr. H. Engelhardt, Sharp & Dohme Co., Baltimore, Md.). Diacetyl aconitine, which is regarded as one of the important derivatives of aconitine, was prepared according to Dunstan's method by adding acetic anhydride to aconitine crystals in molecular proportions at room temperature, and allowing to stand for 10 hours. Each alkaloid was dissolved in 70% alcohol, and 70% alcohol plus 2% acetic acid, which assayed as follows:

Alkaloid.	Date tested.	Solution.	L.D. per Gm. wt.
Aconitine	11/ 5/23	70% alcohol	0.000000060
Aconitine	6/13/24	2% acetic acid	0.000000055
Aconitine	11/15/23	70% alcohol	0.00000010
Aconitine	6/20/24		0.0000015 to 0.0000020
Diacetyl aconitine	11/29/23	70% alcohol	0.000000575
Diacetyl aconitine	6/18/24	2% acetic acid	0.000000575
Diacetyl aconitine	11/29/23	70% alcohol	0.00000060
Diacetyl aconitine	6/18/24		0.00000065
Benzoyl aconine	11/26/23	70% alcohol	0.000030
Benzoyl aconine	7/ 9/24	2% acetic acid	0.000035
Benzoyl aconine	11/26/23	70% alcohol	0.00015
Benzoyl aconine	7/ 9/24		No deaths at 0.00015 (Insufficient material)
Aconine	12/20/23	70% alcohol	0.00025 to 0.00030
Aconine	7/ 9/24	2% acetic acid	0.00030
Aconine	12/20/23	70% alcohol	0.00075 to 0.0010 (Insufficient material)

The above data shows that the pure alkaloids dissolved in 70% alcohol decompose, and this decomposition, or hydrolysis, similar to the deterioration of the tincture, is prevented by the presence of an acid. In an acid alcoholic solution the alkaloids assay as follows:

Aconitine	= 0.000000060 Gm. per Gm. wt.
Diacetyl aconine	= 0.00000060 Gm. per Gm. wt.
Benzoyl aconine	= 0.000030 Gm. per Gm. wt.
Aconine	= 0.00030 Gm. per Gm. wt.

Therefore, aconitine is about 10 times as toxic as diacetyl aconitine, 500 times as toxic as benzoyl aconine, and 5000 times as toxic as aconine.

IV. HYDROGEN ION CONCENTRATION FACTOR.

Wright and Luff(5) state that aconite alkaloids in an alkaline alcoholic solution hydrolyze with remarkable ease. The U. S. P. tinctures and fluidextracts of aconite do not give an alkaline reaction toward litmus when freshly made or when aged, however, this is probably prevented by the alcohol. The alkaloids of aconite are probably in combination with weak acids and decompose readily into the free base. Macht and Fisher(11) found that alkaloids containing unoxidized benzyl nuclei exhibit particularly great toxicity. Crane(12) determined the toxicity of several unrelated alkaloidal substances for paramecium, and observed that in general the toxicity of alkaloids having a large dissociation constant tends to be much influenced by the hydrogen ion concentration of the medium. Bills and Macht(13) found that opium alkaloids at various hydrogen ion concentrations differ in toxicity to paramecium. Therefore, in view of these findings, the toxicity, deterioration and stabilization of aconite preparations and their alkaloids may be a question of hydrogen ion concentration. The above aconite preparations have the following p_H value.

Preparation.	P_H value.	
70% alcohol (control)	5.0	Rapid deterioration
Tincture 1 U. S. P.	5.6	
Tincture 4 U. S. P.	5.6	
Tincture 7 U. S. P.	5.65	
Tincture 2 (acetic acid in finished percolate)	4.2	Partial deterioration
Tincture 5 (acetic acid in finished percolate)	4.65	
Tincture 8 (HCl in finished percolate)	2.3	
Tincture 3 (acid menstruum)	5.00	No deterioration
Tincture 6 (acid menstruum)	5.00	

The above data does not show a distinct variation in hydrogen ion concentration. However, the preparations containing an acid give a higher p_H value than the U. S. P. preparations. The difference is due to the poor dissociating property of acetic acid compared with that of hydrochloric acid. Since the presence of an acid, or the hydrogen ion concentration factor, seems to prevent hydrolysis of the aconite alkaloids, or prevents the deterioration of the tinctures and fluidextracts, the problem of comparing the two methods on a series of preparations with various hydrogen ion concentrations in regard to stability and deterioration is still to be investigated and will be reported later.

V. CONCLUSIONS.

The experiments reported on deterioration show that the deterioration of the tinctures of aconite can be prevented by the addition of an acid to the finished percolate or menstruum.

The experiments on the decomposition of the pure alkaloids of aconite show that the alkaloids do not decompose or hydrolyze in an acid alcoholic solution. That the deterioration of the tinctures and fluidextracts is probably due to decomposition or hydrolysis of the alkaloids, and may be a hydrogen ion concentration factor.

The writer is much indebted to Mrs. Katherine Aspy and C. C. Hargraves

for assistance in obtaining data, and to Dr. A. L. Walters, F. E. Bibbins, H. W. Rhodehamel and Miss Lucile Carter for suggestions and criticisms.

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Eli Lilly & Co.,
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COD-LIVER OIL AND ITS BY-PRODUCTS.*

BY ARTHUR D. HOLMES.

Previous to the general adoption of the steam process, medicinal cod-liver oil was made by the direct fire method. At a still earlier period cod-liver oil was made by the rotting process. All three of these processes have desirable features. The steam process produces the best oil, but it requires considerable equipment and skilled labor. The direct fire process can be used when steam is not available, and experienced operators can produce very good oil by this method especially if water is used in the liver kettle. The rotting process requires practically no equipment or expense for labor. As a result all the processes are in use at the present time and a variety of oils are obtained, which range in appearance from an attractive straw yellow, edible cod-liver oil to a ruby red, nauseating, heavy oil known in the trade as "cod oil."

The uses to which the oils made by these processes are put are as diversified as the nature and the quality of the oils. They vary from the therapeutic use of highly potent medicinal oil as a source of the fat-soluble vitamins to the use of "cod oil" for industrial purposes.

Since the nature, value, and use of cod-liver oil depends to a large measure on the method of manufacture, it is of interest to sketch briefly some of the general conditions surrounding the manufacture of cod-liver oil and its by-products.

To make the highest quality cod-liver oil the livers from healthy fish should be removed as soon as possible after the fish are caught. They should be rendered very promptly, preferably by the steam method. As soon as the livers are thoroughly cooked, the oil will rise to the surface of the kettle and it should be skimmed off at once. As rapidly as possible it should be freed of water and all particles of liver tissue. The oil is then chilled and separated into non-freezing medicinal cod-liver oil and cod-liver stearin. Unless the oil is to be used at once it should be promptly bottled and sealed to protect it from the oxidizing action of the air.

* Scientific Section, A. Ph. A., Buffalo meeting, 1924.

Any deviation from this general procedure for the manufacture of medicinal cod-liver oil results in a more or less inferior product. If the fish are kept as "round" fish for a considerable time after being caught, the oil obtained from their livers will not be of as attractive color and flavor as that produced from livers taken from fish that were dressed soon after they were caught. Also, the quality of cod-liver oil decreases more or less in proportion to the length of time that elapses between taking the livers from the fish and cooking them. The palatability of cod-liver oil decreases very rapidly if the oil is allowed to stand in contact with the liver tissue for any length of time after cooking has ceased.

If cod-liver oil is made by the process briefly outlined above, considerable oil remains in the kettle residue after the crude oil has been skimmed from the kettle. This oil may be obtained by subjecting the kettle residue to slow pressure. During the time required to completely express the oil, the liver residue undergoes some change which imparts a red color and objectionable odor and flavor to the oil. Accordingly this oil is ordinarily used for industrial purposes and is known in the trade as "cod oil," to distinguish it from edible cod-liver oil. The press-cake which still contains some water and a little oil is commercially known as "chum." Unless the "chum" is given prompt attention it decomposes rapidly and then is of value only for fertilizer.

The cod-liver stearin which is obtained when the crude oil is chilled and pressed is not a true stearin but is rather a mixture of oil and stearin that eventually separates into a solid and a liquid portion. The relation between the amount of oil and stearin in commercial cod-liver stearin depends upon a number of factors, chief of which are the conditions of chilling and the temperature at which the commercial stearin is stored. Regardless of the proportion of stearin and oil, commercial cod-liver stearin is a 100% fat containing more or less of the fat-soluble vitamin and its commercial value depends largely upon the manner in which it is prepared and stored.

If cod livers are allowed to stand at ordinary temperature, decomposition soon takes place. When the liver tissues have weakened the cod-liver oil is released and on account of its lower specific gravity rises to the top of the mass. "Sun-dried" or rotted cod-liver oil is made in this manner, although at the present time it is known in the trade as "cod oil." This oil is very viscous, of a dark red color, and of a nauseating odor. This type of cod oil as well as that obtained by slow pressure of cooked cod livers are of value in tanning leather. Cod oils are used in the manufacture of leather to lubricate the fibers. This of course serves to lengthen the life of leather which is subjected to constant bending.

Cod oils made by the rotting process or occurring as a by-product of the manufacture of medicinal oil may be sulphonated or chemically refined which produces sulphonated cod oil or renovated (refined) cod-liver oil. Sulphonated cod oil is produced when cod oil is treated with concentrated sulphuric acid under carefully controlled manufacturing conditions. This is a heavy viscous oil which has special uses in tanning leather.

By chemically refining cod oil its taste, color and odor may be very decidedly improved. This is accomplished by deodorizing, decolorizing and alkali washing. Cod oil ordinarily contains a high percentage of free fatty acids. By heating cod oil with sufficient alkali to neutralize the free fatty acids, one obtains an oil with little or no acidity. With bleaching agents the dark red color of cod oil can

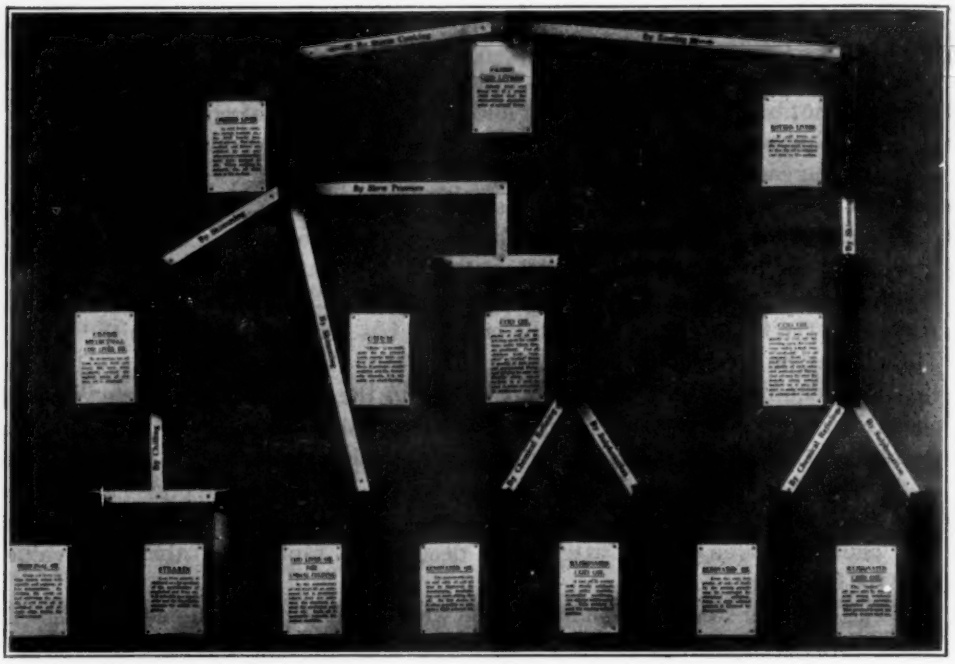

CHART SHOWING VARIETY OF PRODUCTS WHICH MAY BE PRODUCED FROM COD LIVERS.

The explanatory matter on the charts cannot be read, therefore, the wording is given as follows—beginning with the center chart, and that of the next at the left, in the second row to the right, and bottom row in like order. The charts explaining the second division, four in number, are read downward, and the chart at the extreme right is the last one of the series. It will be noted that all except the last four refer to the "steam cooking process."

Fresh Cod Livers—Strictly fresh cod livers are of a cream color rather than the characteristic chocolate color of animals' livers. *Cooked Liver*—As cod livers cook, the tissues weaken and the liver breaks into small pieces. Hot steam cooked cod livers are relished by any one who enjoys sardines that have been packed in oil. When cooking is stopped, the oil soon rises to the surface. *Crude Medicinal Cod-Liver Oil*—By skimming hot oil from strictly fresh cod livers that have been promptly cooked the highest grade of cod-liver oil is obtained. *Medicinal Oil*—Crude cod-liver oil contains stearin which will solidify and separate at low temperatures. By chilling the crude oil and removing the stearin, a cod-liver oil is obtained that will remain clear during the winter season. *Stearin*—Cod-liver stearin is obtained as a by-product of the manufacture of medicinal cod-liver oil. It is valuable as a source of fat and the fat soluble vitamins for animal nutrition. *Cod-Liver Oil for Animal Feeding*—In the manufacture of cod-liver oil an occasional lot is produced which does not quite meet the standards desired for medicinal cod-liver oil. Such oil is extremely valuable for animal nutrition. *Chum*—"Chum" is the trade name for the pressed kettle residue from cod-liver oil manufacture. Since it contains animal proteins and the fat-soluble vitamins, it is valuable for stock feeding. *Cod Oil*—When the cooked cod livers (skimmed or unskimmed) are subjected to slow pressure, a red oil is obtained. This is the highest grade of cod oil. It may be used in this form by leather tanners for oiling leathers. By refining or sulphonating it may be made into renovated or sulphonated oil. *Renovated Oil*—The undesirable color and odor of cod oil may be improved by decolorizing, deodorizing and neutralizing the oil. By this means it is often possible to produce a light-colored oil. *Sulphonated Cod Oil*—If cod oil is treated with strong sulphuric acid under carefully controlled conditions, one obtains sulphonated oil. This product is used for treating tanned leathers.

Rotted Livers—If cod livers are allowed to decompose, the tissues soon weaken so that the oil is released and rises to the surface. *Cod Oil*—There are many grades of cod oil depending upon the conditions under which they are produced. That obtained from "sun-tried" or "rotted" livers is usually of dark color and pronounced flavor. It may be used directly for oiling tanned leathers or it may be used to make renovated or sulphonated cod oil. *Renovated Oil*—Even the very low grades of cod oil made by the rotting process may be renovated by chemical refining. Often a light colored product is obtained by this process. *Sulphonated Cod Oil*—The "rotted" cod oil may also be treated with strong sulphuric acid under carefully controlled conditions. This product is used for treating tanned leathers.

be changed to the desirable straw yellow color of medicinal cod-liver oil. Also the offensive odor of cod oil may be more or less removed by different deodorizing processes but if it is removed by "blowing" the oil with air any vitamin content which the cod oil originally possessed is decreased as the result of the oxidizing action of the air.

Inasmuch as cod oil and non-edible cod-liver oils sell at a much lower price than medicinal cod-liver oil and the cost of chemically refining such oils is not at all prohibitive it is a profitable business to renovate non-edible oils and sell them as medicinal oil. Since such renovated oils are on the market it behooves the consumer who really desires an oil rich in the fat-soluble vitamins to demand information concerning the vitamin content of any oil in which he may be interested.

Studies of the vitamin content of oils produced by promptly rendering strictly fresh livers as compared with the vitamin content of oils produced by the rotting process have shown that the rotted oils contained relatively little vitamin A. Thus it is apparent that if one wishes a cod-liver oil rich in the fat-soluble vitamins he cannot be guided by physical appearance or chemical analysis of a given oil, for it is not at all difficult to produce a renovated oil which will meet all the specifications set for a medicinal oil and still such an oil may be lacking or nearly so in the desired fat-soluble vitamins.

From this it is evident that while it is possible by chemically refining to so improve a cod oil, that one obtains a renovated oil which is fairly satisfactory as regards color, odor and taste, chemical refining does not enhance the original vitamin content of cod oil. To be sure of obtaining a cod-liver oil with a high vitamin potency one must insist on an oil that has been biologically tested for its vitamin content.

RESEARCH LABORATORIES,
E. L. PATCH COMPANY.

A PHYTO-PHARMACOLOGICAL METHOD OF ASSAYING DIGITALIS.*

BY DAVID I. MACHT AND JOHN C. KRANTZ, JR.†

INTRODUCTION.

During the last few years one of the authors in collaboration with various associates has been developing a study concerning the effects of drugs and poisons on plant protoplasm. In comparing the results thus obtained with the same substances on animal tissues a scientific phyto-pharmacological method of testing toxicity has been developed in contradistinction to the zoöpharmacological methods. This method has already yielded very interesting results in the study of the relative toxicity of various chemical substances on animal and plant tissues respectively.

Thus it has been shown that, while cocaine was very poisonous for animals, on the other hand certain poisons of animal origin were found to be much more poisonous to plants than to animal test objects. In connection with these phyto-pharmacological studies Macht and Lubin made a brief examination of various digitalis principles and studied their toxicity on the seedlings of *Lupinus albus*.

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* Scientific Section, A. Ph. A., Buffalo meeting, 1924.

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It was found that all of these principles were more or less deleterious to the growth of the plant; these experiences suggested the present investigation.

It was thought worth while to study the toxicity of the galenical preparations of digitalis and more particularly the tincture upon the growth of the plants with the hope of possibly finding a simple relationship between the concentration of the digitalis preparations on the one hand and their relative toxicity to plant protoplasm on the other. This investigation is still in progress but the results already in hand are sufficiently clear-cut and interesting to warrant this preliminary report.

METHOD OF STUDY.

The method of study was the same as that employed by the senior author and his associates on other occasions. The toxicity of solutions of tincture of digitalis from 0.1% to 1% upon the growth of the single straight and well-demarcated roots of the seedlings of *Lupinus albus* was noted and this toxicity was compared with the toxicity of various digitalis preparations on animals, as determined by the cat method.

In studying the growth of the seedlings the following procedure was followed:

The dry seeds were soaked over night in tap water at ordinary temperature. On the following day the swollen seeds were planted with the hilum downward in moist, finely ground sphagnum moss. The planted seeds were placed in a thermostat and left at a constant temperature of 20° C. On the third day after planting, the roots of the seedlings are of convenient length for measurement and are ready for study. After recording the exact length of the root it is placed in an upright test-tube of hard glass containing a nutrient solution, the seed resting upon the upper edge of the tube. The solution employed was the so-called Shive Solution which contains calcium nitrate, magnesium sulphate, and mono-potassium acid phosphate. Such a solution was prepared by mixing 10.4 cc. of 0.5 molar solution of calcium nitrate, 30 cc. of 0.5 molar solution of magnesium sulphate and 36 cc. of 0.5 molar phosphate, with distilled water to make one liter. The normal growth of the *Lupinus* rootlets was studied by immersing the seedlings in a mixture of equal volumes of Shive Solution and distilled water. The digitalis solutions were added to the mixture of distilled water and Shive Solution before employing the latter as a nutrient solution. After measuring accurately the length of each rootlet and placing the seedlings in the control and drug solutions, the whole was again placed in the incubator and left at a constant temperature of 20° C., and the effect of the drug solutions was determined after twenty-four hours. Ten seedlings were placed in the control solution, on one-half Shive Solution and one-half distilled water, and ten seedlings were employed to study each concentration of the tincture. The alcoholic content of various dilutions of the digitalis tincture was kept constant. The assay of the tincture upon the cats was carried out in the following manner:

Lightly anesthetize the animal with ether and cannulate the femoral vein. The tincture was diluted to ten times its volume with normal saline solution and allowed to run into the femoral vein, 10 cc. in the first 5 minutes and subsequently 1 cc. a minute until cessation of the heart occurs and the respiration continues for a short time thereafter. The heart-beat is counted throughout the experiment and

a typical digitalis death as described above marks the end-point of the successful experiment.

RESULTS.

An examination of the data so far in hand has shown that the toxicity of various solutions of tincture of digitalis for plants, the alcoholic content remaining constant, varied directly with the concentration of the drug solutions: this is well illustrated by the following table of experiments of June 26th and 27th.

EXPERIMENTS JUNE 26–27.

Solution tested.		Growth.	Solution tested.		Growth.
Shive Control		100%	Tinct. Digitalis	0.5%	83%
Tinct. Digitalis	0.1%	96%	Tinct. Digitalis	0.6%	81%
Tinct. Digitalis	0.2%	92%	Tinct. Digitalis	0.7%	79%
Tinct. Digitalis	0.3%	89%	Tinct. Digitalis	0.8%	74%
Tinct. Digitalis	0.4%	86%	Tinct. Digitalis	0.9%	72%
			Tinct. Digitalis	1.0%	70%

Having found that the growth of the seedlings is inversely proportional to the concentration of the tincture in the nutrient solution, some other specimens of tincture obtained from different leaves were tested in a similar way and it was found that the toxicity of the various preparations upon the same crop of seedlings, maintaining other conditions constant, was not the same. This difference in toxicity was found to run parallel with the relative toxicity of the same preparations for cats. Thus, the relative toxicity of two different tinctures of digitalis on the *Lupinus* seedlings was in the ratio of 107.6% to 100%. The relative toxicity upon the mammalian heart as determined by the cat method was 11.28 cc. in one case and 10.48 cc. in the other, a ratio closely corresponding to that obtained by the phyto-pharmacological method.

The present investigation is still in progress. The authors propose to examine a large number of digitalis tinctures by the above method and it is thought very likely that, after a sufficient number of experiments have been performed, a practical method will be developed for assaying digitalis, without recourse to animal experiments.

ABSTRACT OF DISCUSSION.

The foregoing paper was discussed by Messrs. Viehoever, Smith, Nitardy, Munch, Pittenger, and Schneider. A question was raised concerning the effect of alcohol upon the growth of the seedlings. The author made clear, that the alcoholic content of all tests was kept constant, and thus retardation of growth was a function of the activity of the Digitalis alone.

Reference to the time required for the experiment was made by the author in response to questions. He said that the time required for two measurements of the seedlings is about one hour; the time required for the growth of the seedlings in the Digitalis solutions is about twenty-four hours. The author stated that no bacteriological difficulties were experienced, arising from growths in the nutrient solutions.

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THE ALKALINITY OF MAGMA MAGNESIÆ AS DETERMINED BY THE HYDROGEN ELECTRODE. II.*

BY R. B. SMITH AND P. M. GIESY.

In a previous investigation[1] the authors reported on determinations of the p_H of pure Magma Magnesiæ, concluding that its p_H was 10.51. But in one experiment milk of p_H 13.31 was washed free from alkali, when the p_H, instead of remaining constant at 10.51, continued to fall to 10.20. Since this was rather unsatisfactory, we have continued this work, determining the p_H of samples of Magma Magnesiæ washed free from excesses of magnesium sulphate and sodium hydroxide. The results corroborate our earlier conclusions; they show that the p_H of pure Magma Magnesiæ lies between 10.51 and 10.54. Distilled water was used in all washings recorded in this work.

SAMPLE NO. 3.

Original milk	$p_H = 10.33$
After four washings, boiling, and cooling	$p_H = 10.37$
After four more washings, boiling, and cooling	$p_H = 10.51$

SAMPLE NO. 4.

This was prepared by adding slowly, with constant stirring, 56 Gm. of 45% NaOH solution to 100 Gm. of $MgSO_4.7H_2O$ in 500 cc. of water. Its original p_H was 9.48.

After three washings	$p_H = 10.20$
After two more washings	$p_H = 10.41$
After two more washings	$p_H = 10.47$
After two more washings	$p_H = 10.57$
After two more washings	$p_H = 10.57$
After two more washings	$p_H = 10.50$

It is probable that the p_H over the period of the last six washings was constant and that the above variations were due to temperature effects.

SAMPLE NO. 5.

This was prepared by adding a solution of 100 Gm. of $MgSO_4.7H_2O$ in 200 cc. of water slowly, with constant stirring, to 45 Gm. of sodium hydroxide in 355 cc. of water. Original p_H = 13.24.

After four washings	$p_H = 11.10$
After three more washings	$p_H = 10.56$
After two more washings	$p_H = 10.65$
After two more washings	$p_H = 10.53$
After two more washings	$p_H = 10.53$ (T = 25.3° C.)

SAMPLE NO. 7.

This sample was prepared as follows:

125 Gm. $MgCO_3$ in 500 cc. H_2O.
85.5 Gm. NaOH in 405 cc. H_2O.

The amount of NaOH used was calculated to give a slight excess to insure the decomposition of all of the $MgCO_3$. The NaOH was added slowly with stirring to the suspension of $MgCO_3$ and after the NaOH had been added the whole was stirred mechanically for $1^1/_2$ hours.

* Scientific Section, A. Ph. A., Buffalo meeting, 1924.

[1] J. A. PH. A., 12, 955 (Nov., 1923).

This material was diluted to 4 liters and allowed to settle over Sunday. It was then drained down to about 2 liters and transferred to a 4-gallon cylinder and 2 gallons of water added. It was washed in this cylinder, using 2 gallons of water per washing, until it passed the U. S. P. test for free alkali. It was again transferred to a 4-liter beaker and after it had settled sufficiently to a 2-liter cylinder, where it was allowed to settle for six days. It was then drained off and bottled and then had a volume of 1300 cc.

This had a p_H of 10.58 at 22.4° C. It therefore contained only an extremely slight amount of alkali, about 0.00004 N. Nevertheless, a U. S. P. test for free alkali required nine drops of $N/10$ acid instead of five, the upper limit. This shows the unreliability of the U. S. P. test, and the much greater delicacy of the electrometric p_H determination.

THE ALKALINITY OF MAGMA MAGNESIÆ. III. THE EFFECT OF MAGNESIUM CARBONATE.

BY R. B. SMITH AND P. M. GIESY.

In previous investigations by the same authors[1] the p_H of pure milk of magnesia was determined. Samples were prepared by mixing solutions of $MgSO_4$ and NaOH in such proportions that in some samples there was an excess of $MgSO_4$ and in the others an excess of NaOH. The p_H of the pure milk was determined by washing these samples with distilled water to constant p_H.

It was determined as a result of these experiments that the p_H of pure milk of magnesia was 10.52. During the course of this work several samples washed from high p_H values did not come to the p_H which we had reason to believe was that of pure Magma Magnesiæ; their p_H values continued to fall off, so that values as low as 10.03 were obtained. We were unable to explain this at the time.

A later investigation was made on the washing of milk of magnesia in which p_H and soluble matter determinations were made to follow the washing. During the washing of several samples which had had an initial p_H of above 10.52, it was noticed that the p_H continued to drop even after a p_H of 10.52 was attained, while the soluble matter shortly became constant.

A consideration of the solubilities of $MgCO_3$ and $Mg(OH)_2$ which are given by Seidell, "Solubilities of Inorganic and Organic Compounds," Second Edition, as $MgCO_3$ = 0.18 Gm. per liter, solution in equilibrium with air at 20° C.; $Mg(OH)_2$ = 0.009 Gm. per liter, gave us the idea that the p_H of a $Mg(OH)_2$ suspension might be considerably affected by the presence of $MgCO_3$. This $MgCO_3$ could be introduced into the solution by the carbonate impurities of the NaOH used for precipitation, by CO_2 in the distilled water, or by absorption of CO_2 from the air by the alkaline solutions as they were being washed. Since magnesium carbonate is relatively insoluble, its removal by washing would be a slow process and a saturated solution of it would always be present until all the solid $MgCO_3$ was washed out. This dissolved magnesium carbonate would be expected to depress the solubility and therefore the p_H of the magnesium hydroxide suspension by its mass action effect.

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[1] J. A. PH. A., 12, 955 (Nov., 1923).

To test this hypothesis, a sample of Magma Magnesiæ which had been washed down to a p_H of 10.52 was treated with an excess of $MgCO_3$, stirred and allowed to stand over night. Its p_H was then determined to be 10.18.

This lowering is much less than the calculated lowering which would be produced by adding such an excess of Mg ions to a suspension of pure $Mg(OH)_2$. The reason for this appears to be that $MgCO_3$ itself is considerably hydrolyzed, giving hydroxyl ions. A well-washed suspension of magnesium carbonate had a p_H of 10.00 at 25°. When magnesium hydroxide was added, the p_H of the mixture was raised to 10.17, which checks well with the earlier value of 10.18.

It is therefore evident that while magnesium carbonate lowers the p_H of Magma Magnesiæ to some extent, it does not do so sufficiently to explain our earlier difficulties.

ABSTRACT OF DISCUSSION.

Dr. I. M. Kolthoff assumed that the authors preferred to determine the p_H of the solution rather than use the titration method; he thought it was rather difficult to determine the p_H with the potentiometer because of the conductivity of the solution, the sharpness of the measurement was not so definite; he preferred to determine the electric conductivity or titrate.

Mr. Giesy feared the conductivity method would not be of great value because there may be sodium sulphate in the preparation; it is easier, in practice, to wash out all of the caustic than all of the sodium sulphate which is formed during the precipitation. As to the time for a p_H determination when everything is in readiness—it only requires about five minutes. His objection, however, to the U. S. P. method was not the time required, but the results were not sufficiently accurate.

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CINARA, CARDUUS AND SCOLYMUS OF THE ANCIENTS.*

BY E. V. HOWELL.

In 1921, in Paris I purchased some artichoke seed. I planted these in the fall. In the spring the plants promptly appeared, flourished through the summer and fall, resisted a good deal of cold, but died down during the winter. I was puzzled, however, as I seemed to have two varieties, differing in the leaves and spines. The next spring the plants with the more dissected leaves bloomed. I ate the scales and calyx of the flowers of this plant with oil and vinegar or drawn butter sauce, after the French custom. The other variety did not bloom until the third year. During this time, I thought it was another but similar plant, which was not the case, as it was the same plant with different leaves. I became interested in the plant and its history.

To identify plants of to-day with those of ancient times is a difficult task and is done frequently without any degree of absolute surety. Until the later and more scientific classification of plants, we guess in our identification mainly by comparisons and descriptions and observations that may have been faulty or merely incomplete. The illustrations of them in the older botanical works are frequently of but little aid.

This plant, useful and ornamental, so highly thought of in Europe is not so well known generally in America. It deserves a place in our gardens as a vegetable. It

* Presented before Scientific Section, A. Ph. A., and also Section on Historical Pharmacy, Buffalo meeting, 1924.

appears that the names given to the artichoke were Cinara, Carduus, Scolymus and even Cactus! It was generally agreed that it was a kind of thistle.

Cinara, originally a Greek word, belonged to the thistle family. The description of its top, as given by Columella,[1] agrees, as Nonnius[2] and others think, with our artichoke.

The Cinara had prickles, the kind, having lost them by cultivation, being preferred. It was raised from seed planted in spring; however, in Italy, slips or shoots were planted in autumn for earlier summer use. Continuous watering was recommended.[3]

By some, Carduus and Cinara were taken to be the same plant. Palladius and Pliny in regard to Carduus give about the same description as Columella and the Greeks give for Cinara, *i. e.*, that it lost its prickles through cultivation, the flowers were purple, it was propagated by seeds and shoots, required frequent watering, and grew better with the application of ashes. Athenæus asserts that the Cinara was called Cardus and Carduus by the Latins. Apicus and Pliny state the method of eating the plant, and Pliny gives directions for pickling with vinegar. However, they are not explicit as to the parts used.

The Scolymus is also classed among the thistles by Pliny. He states the seeds were covered by a kind of wool, that the plants had a high stem surrounded with leaves which were prickly but wouldn't sting when the plant was withered; that it flowered throughout the summer, often produced flowers and ripe seed at the same time; that the root was thick, black, sweet, containing a milk juice, and that it could be eaten both raw and cooked.

Theophrastus says the calyx of the Scolymus was not prickly and remarks that when the plant was in flower, the root was most palatable. Dioscorides states that the flower head *is* prickly (*Capitulum spinosum*). This difference in description has led some to think they are describing different plants. Dioscorides certainly distinguishes between Scolymus and Cinara. Pliny says Scolymus differs from the edible Carduus, in that the former has edible *roots*. Dioscorides says the roots were not eaten, but the young leaves, which he says were dressed like asparagus.

From experiments on the plants here, I can readily see how so much confusion could arise from mere descriptions; as for instance, for sale now, it is the flower before it blooms, that is the scales and base of calyx,that is used. One author will mention this but omit the question as to whether the leaves and roots *can* be eaten, or are, in fact, usually eaten; then the conclusion that different plants must be involved, one with an edible top, the other with an edible root. As I mention later, I ate the young shoots, the midrib of the leaves and the younger part of the root stock, as we do asparagus. The leaves are bitter. The root is edible.

Clusius seemed to think the *Carduus chrysanthemus* of the 17th century, later *Scolymus hispanicus*, the garden thistle, was the Scolymus of Theophrastus. This differs too much, however, to be true.

Comparing many descriptions, some perhaps erroneous, others incomplete, making allowances for the apparent contradictions arising here and there, we are reasonably sure that the ancients used the juicy calyx, the tender stalks or shoots,

[1] "Columella," lib *x*, vers. 235.

[2] "Lud, Nonnii Diæteticon."

[3] Geopon, 925.

and perhaps the root of some plant classed by them as a thistle. This plant was lost or forgotten and finally reappeared, coming in from the east—from Arabia, most likely—into Italy and Spain to France. About 1466 one of the family of Strozzi brought the first artichokes to Florence from Naples.[1] It is recorded as first seen in a Venetian garden in 1473.[2] They were introduced into France in the beginning of the 16th century[3] and into England in the reign of Henry the Eighth, 1509–1547.

"Artichokes grew sometimes only in the isle of Sicily and since my remembrance they were so dainty in England that usually they were sold for crowns apiece." (Moffat, "Health's Improvement;" see also Hakluyt, Vol. II, "Biographia Brittanica," Vol. IV, and "Anderson's History of Commerce.") After its introduction into Europe we have it frequently mentioned.

Often the origin of plant names is valuable in tracing its habitat and introduction; this is true of the artichoke. It is likely the word is from the Arabic al-karshof, harsof, harxof, harchiof, from old Spanish alcarchofa; from the Italian articiocco, among other forms. From the English there were many forms due to popular etymology. That the plant is well known is evidenced by its modern names,—Swedish, Artstocka; Danish, Artischok; Dutch, Artisjok; German, Artischocke; French, Artichaut; Spanish, Artichofa; Italian, Articiocco. The Italian "articiocco" corrupt form of alcarcioffo and the old Spanish alcoarchofa indicate an Arabian origin for the plant.

After comparing the positive statements made by various observers, and not allowing the *omission* of some description as to a part being edible or not edible to be taken as a negative statement when not mentioned, but rather an incomplete observation, I am inclined to think the artichoke I am cultivating is the scolymus of Dioscorides (about A. D. 77). Such a statement that the root is sweet and edible; by others, bitter, or that the leaves are spiny or otherwise, is not a satisfactory reason for considering such plants as different species, as evidenced by my two varieties. For instance, where the qualities of the root are so much discussed, I find the root is neither sweet nor bitter, but having a taste very similar to our so-called Jerusalem artichoke, a plant not an artichoke nor from Jerusalem, but a sun-flower. The *finding* of *a milk curdling principle in the flowers*, which I have only partially separated as yet, is further evidence that this is the scolymus. Pena and Lobel stated that the Italians used the flowers to curdle milk for making cheese. I can confirm this possibility: two tesapoonfuls of an aqueous infusion, using two flowers to one-half gallon of water, will curdle a glass of milk. This junket is very palatable. This experiment, however, is not conclusive, because other thistles have been reported to have this quality and I have not tried them. Certainly other plants possess this property, particularly the *Galium verum*, or yellow ladies' bedstraw, petty meguet, yellow goose grass, cheese rennet. ("Lin. Gen. Plant." 117. Fuchs 196, Trag. 492, J. Bauhin, III, 170.) "The Encyclopædia or a Dictionary of Arts and Sciences," 1st American edition, 1798, states the flowers of galium "will coagulate boiling milk and the best Cheshire cheese is said to be prepared with them." In the "Kreuterbuch," newly brought up to date, illus-

[1] "Manni de Florentinis," p. 34.

[2] "Herm. Barbar. ad Dioscor. III," 15.

[3] "Ruellius De Nat. Stirpium, Bas." 1543.

trated etc., Adam Lonitzer, Ulm 1737, with additions by Balthazor Ehrhart p. 190, I notice this statement, "the wild thistle or strobildorn is the scolymus of Dioscorides, the *Carduus cinara* and *strobilus* of the Latins, this is the French artichaut and articoca. The last form is its common use in Germany as Artischoca."

Loncier, "Opus Novum Nat. Hist. Francofurti;" 1551 ed. p. 71 has the name as *Carduus hortensis* or *Scolymus aculeata*. John Ray, "Hist. Plantæ" lib. VII p. 299, 1685 ed., describes the *Carduus sive, Scolymus sativus spinosus et non spinosus* (J. Bauhin,) or *Cinara hortensis foliis non aculeatis*, G. Bauhin.

The most satisfactory article on the artichoke and one that further convinces me the artichoke is the scolymus of Dioscorides is from the "Dictionnaire Oeconomique" by de la Marre, Paris, 1767, Vol. I, p. 192, in which he says the plant is Cinara, Cynara or Scolymus—English artichoke. The calyx is scaly, with thick base (placenta), flowers bluish purple, on stalks, large, long, hard, bitter root. Leaves spiny, long and wide, with graylike down, stem straight, thick, firm, branched, grooved; covered with cottonish down, bitter, pulpy. The garden variety without spines, known as the red artichoke, differs from and is more delicate than the violet artichoke. A rapid grower and from shape of head called by the English, globe artichoke. There follows a description of the green artichoke (the *Cinara hortensis, foliis non aculeatis* of G. Bauhin) and modes of culture. A third variety, *Cardon de Tours* (*Cinara spinosa cujus pediculi essilantur* of G. Bauhin). *Fourth, Cardon d'Espagne* or the common cardon with spineless leaves which is the chardonnette or cardonette of southern France (the *Cinara sylvestris, latifolia* of C. Bauhin.) Fifth, another small variety of the gardens, known as the white artichoke, cultivated with difficulty. Sixth, the violet artichoke. Seventh, the sweet artichoke of Genoa, with yellowish flesh, more related to the carline thistle.

His descriptions of forcing by cutting off one-third of the leaves, of leaving one head to the stalk, the need of copious watering, use of ashes, and the attack of insects agree with my experiences here. The medicinal uses were stated as a cordial, sudorific, restorative and appetizer, also as a remedy for difficulty in urination, and was recommended by Ray for jaundice and adds the leaves pounded to a paste were applied to the navels of young children for worms. He mentions the use of the dried flowers of the Spanish or common chardon and other species to coagulate milk.

The following statement agrees largely with the medicinal uses of the thistle family in ancient times.

"Dioscorides saith that this Scolymus is good to expell strong and stinking urine, and to amend the strong or stinking favour of the Armeholes, or of the whole body; if the decoction of the rootes in wine be drunk, the shootes also are eaten like unto Aspharagus; and the young heads also in Spaine before they flower: but they use to raise up the earth over the young shootes untill they bee risen to a good height, which then are not onely white but more tender and delicate, to be eaten raw as their usuall manner is with Oyle, Pepper, and Salt, or boyled or stewed; the flowers are used by the Italians as Lobel and Pena say to curdle milke, whereof they make cheese, as also are persuaded that the sayd flowers are given to women with child, in their broth or to drinke doth hinder absorsment, and cause them to goe out their full time in good plight, and also is very good for those that doe not teeme or are barren, and cause fertilitie. The Cretanes used their wilde Artichoke in the same manner that the Italians, Spaniards and French use their Cardone or

Chardons. Theophrastus also saith that the roote of his Scolymus is most pleasant being boyled or eaten raw, but then chiefly when it is in flower, as also that the inner substance of the heads are eaten. Clusius saith that they of Salamanca use to eate the young plants, rootes and all, being washed eyther raw or boyled with flesh, and that with the milkie juice thereof they doe coagulate or curdle any milke, and with the flowers doe counterfet Saffron, for the like uses as in other places they doe with the flowers of Bastard Saffron."

The following references all have items of interest in regard to the thistles in general.

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John Ray, "Hist. Plantarum." Vol I. *De Carlina pp. 288–9 De Carduo in genere* pp. 299-318. Lond. 1686.

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Julius Pontedera, "Dissertations," 5, 6, *Scolymus* p. 106–107 *Cnicus*, 128–139, *Carduus* 121.

R. Dodonaeus, "Patavia," 1720.

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In conclusion I wish to emphasize the importance of the artichoke as a food plant, and as an ornamental shrub. Also to call attention to the ferment I have found in it and its uses. Experiments are now being conducted with this ferment and those in the Venus' fly trap, pitcher plants, etc.

HOSPITALS FINDING AID IN FINANCING PROBLEMS.

"There are more than 7000 hospitals and nearly 2000 allied institutions in the United States and Canada. These 9000 institutions have fairly similar problems in organization, construction, equipment, operation and maintenance. It has estimated that more than $350,000,000 is spent annually for new construction and equipment and that more than $525,000,000 is spent each year for hospital maintenance—a total closely approaching a billion dollars," declared Ray M. Hudson, chief of the Division of Simplified Practice, Department of Commerce, addressing the American Hospital Association convention in Buffalo.

"Raising a billion dollars in your field is much more difficult than in more commercial fields. With all due regard to the careful control of expenditures and rigid supervision to avoid all preventable wastes, there is yet a large area of possible saving which you may cultivate with advantage and profit—the field of simplification, in which your Committee on General Furnishings and Supplies has just begun a survey," he continued. "It is not at all impossible to save one per cent. through this avenue of economy—and one per cent. of your annual expenditures is $10,000,000. If the estimates of current average construction costs are fair, then one per cent. saved through simplification is equivalent to the cost of 28 one hundred bed hospitals. From the angle of maintenance, if the estimates of average maintenance costs of $4.00 per bed per day are fair, then one per cent.—$10,000,000 saved through simplification is sufficient to maintain the 750,000 beds in the hospitals of the United States and Canada for nearly four days.

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A STUDY IN THE EXTRACTION OF NUX VOMICA.*

BY J. A. PIERCE.

It is a well-recognized fact that Nux Vomica is one of the most difficult drugs to extract thoroughly and economically.

Attention was drawn to a suggestion that the addition of 1% acetic acid to the present U. S. P. menstruum for tincture would aid materially in the rapidity of extraction, thus diminishing the amount of menstruum necessary to exhaust.

For the purpose of investigating the value of the modified menstruum over the present U. S. P. menstruum two parallel percolations were conducted. Five hundred grams of the same lot of drug were moistened, packed, macerated and percolated: using the process as described for Tincture of Nux Vomica, U. S. P. IX.

In undertaking this work, particularly on Tincture of Nux Vomica, it was thought that possibly the use of acetic acid might retard the usual fat extraction always obtained in Nux Vomica preparations, and that the use of this menstruum could be extended to Extract of Nux Vomica.

With this purpose in mind, the percentage of oil or fats obtained by each of the aforementioned methods was determined and found as follows:

U. S. P. IX menstruum	2.93%
U. S. P. IX menstruum plus acetic acid 1%	2.22%

When 1667 cc. of percolate from each percolator had been obtained, an assay for total alkaloids was made with results as follows:

U. S. P. menstruum (IX)	0.276 Gm. per 100 cc.
U. S. P. menstruum (IX) plus acetic acid	0.290 Gm. per 100 cc.

Continuing the percolation of each, it was found that for complete exhaustion by Mayer's reagent test; it was necessary to use:

Of U. S. P. IX menstruum	7054 cc.
Of U. S. P. IX menstruum plus acetic acid	3857 cc.

Portions of the percolates were worked up into extracts, fluidextracts, and tinctures. No difference was found between the products prepared by the U. S. P. and the modified procedures.

* Section on Practical Pharmacy and Dispensing, A. Ph. A., Buffalo meeting, 1924.

Conclusions: From the foregoing it is concluded that the addition of 1% acetic acid materially decreases the amount of menstruum necessary to exhaust Nux Vomica, without injuring the quality of the products. It does not prevent the extraction of fat sufficiently to make it of value from this standpoint.

LABORATORIES OF
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BROOKLYN, N. Y.

WHAT IS A MODERN DRUG STORE?*

BY F. W. E. STEDEM.

This is a question to be replied to according to the observer's point of view. It may be answered in like manner. The writer, believing that a "drug store" is a place in which such things are done as are primarily helpful to the doctor in his efforts to heal the sick, quite naturally will describe a "modern drug store" as his ideal appeals to him.

It is not the intention to criticize any one, anywhere, or for any reason, where drug stores are conducted differently than the way the writer would have you believe the "Modern Drug Store" should be conducted.

The writer has often been vastly amused by and through his experiences, in visiting drug stores in his own home city and in other cities. The sign frequently reads "Modern Drug Store," "The Up-to-Date Drug Store," "The Drug Store of The People."

During these visits, the inquiry usually resorted to on entering the drug store is for "sterile water" followed by an order for an eight-ounce bottle. The number of failures to get an encouraging response is startling. The replies to the inquiry and order ranging, from one indicating a total lack of knowledge of the article wanted, to a lame excuse for not "stocking it"—because of lack of need or orders for it.

The next procedure is the presentation of a prescription order, for two drachms of 1% solution of atropine sulphate, sterile, and in six cases out of ten, in a quest recently made, the failure to get response of an assuring nature, caused a withdrawal of the order.

Now, as clearly indicated at the outset of this writing, it is not the intention of the writer to criticize anyone, anywhere, because of his ideals, in the conduct of a drug-store business, but such experiences as these related certainly must and do cause a great deal of adverse criticism of drug stores, drug-store methods and druggists.

The writer believes that many good druggists are compelled by the exigencies of their particular cases, to carry side-lines of great variety, the merchandising of which and the resultant profit make it possible for them to remain in their chosen localities, and when the department of medicinal supplies and prescription work is properly manned and conducted, honor and respect are the reward.

The writer has in mind individually owned as well as chain stores, where the department of sick-room supplies and prescriptions is conducted in a manner beyond reproach.

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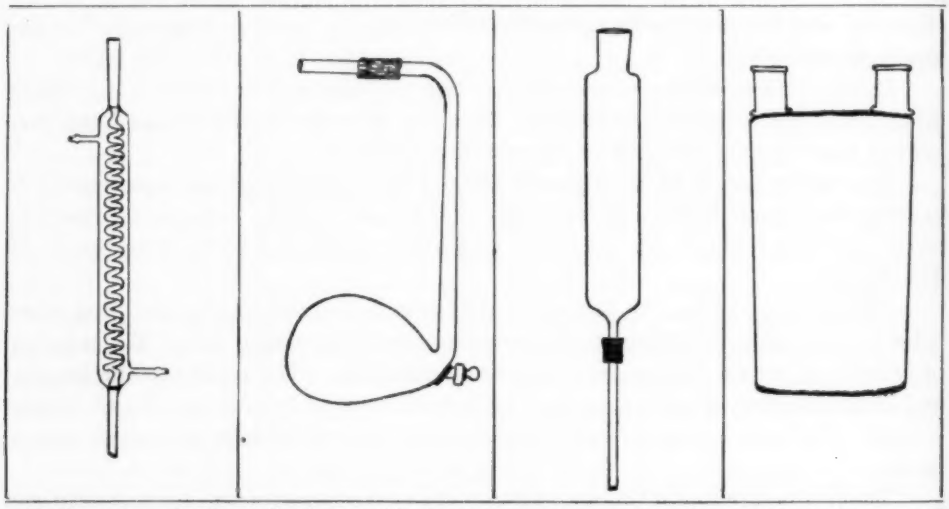
* Section on Practical Pharmacy and Dispensing A. Ph. A., Buffalo meeting, 1924.

The writer also knows that a "Modern Drug Store"—one conducted with the sole purpose of aiding the physician in his efforts to heal the sick—is possible both ethically and commercially, and consequently describes his ideal "Modern Drug Store:" Therefore, my definition of a modern drug store is one equipped to supply the needs of physicians, and must have equipment of both stock and utensils to meet that condition, contemplating the advances of modern medicine, and keeping pace with all the up-to-date demands of that need.

Physically, the modern drug store is composed of the reception room, show room, prescription laboratory, laboratory for the production and storage of sterile products, and storage room with refrigerators. The refrigerator stored with biologicals and an automatically regulated temperature.

The reception room is, of course, the main store, proper, and contains in addition to necessary chairs, a display of all kinds of sick-room helps and needs.



Explanatory—As shown in the cut this simple apparatus consists of a retort, condenser, and a supply reservoir. The supply reservoir is so placed as to insure a continuous fresh supply of water to the retort, as the water is vaporized, and this because of the small size of the retort. Collection is to be made directly into the vessels in which the fresh distilled water is to be fractioned or sold—ampuls or ordinary glass-stoppered bottles, previously made sterile, stored and protected in the authorized way.—F. W. E. S.

Conveniently located, is a desk with phone and proper service, and a wrapping counter. Also some convenient nook or corner, framed off and so arranged that articles of a kind and nature not ordinarily on display could be shown customers in privacy. This room may also be used as a fitting room for trusses, abdominal bandages and like needs.

The laboratories to be equipped with all necessary utensils for the making of all kinds of prescription work and such solutions and mixtures as are wanted for intravenous, intramuscular and intradermal medication, as well as spinal injection.

This means that in addition to the ordinary collection of mortars and graduates, we need steam coils, sand coils, hot water coils, flasks of sterile distilled water, both hot and cold, an autoclave, a dry sterilizing oven and—not necessarily, but to great advantage—an automatic still for the constant production of fresh distilled water.

The apparatus herein shown for this purpose is not quite perfect, but will serve, and can be constructed at small cost.

In talking of all this, my mind goes back forty years or more to an old German druggist friend who called me in to consult with him about the sale of his store. In his laboratory was a pharmaceutical coal-burning stove, which was a miracle of completeness as to the need.

I constantly think of him—this old, long dead friend of mine, as the most modern of all my druggist acquaintances, and this thought is always fruitful of the hope that he may live again and always in his followers.

DRUG CLERKS AND BELLADONNA.*

BY DR. FRED B. KILMER, PH.M.

Something like half a century ago, there was assigned to a young clerk working in a drug store, the task of pounding belladonna in an iron mortar. The root was refractory, the day was hot. The job was not well done, but during its progress the dust from the root smeared his face and reached his eyes. The result was a pair of distended pupils and a dimmed vision.

The lad's mother, in great alarm, visited the druggist, who explained that this was the natural action of belladonna when ingested into the eye, and added the reassurance that it would pass away in a day or two, and it was so.

This lad was the writer, and that experience gave to him a life long interest in the drug.

Before, and since that time many a drug clerk has been brought vividly to a realizing sense of the power of belladonna to dilate the pupil of the eye.

More than one hundred and fifty years ago a drug clerk in the City of Hamburg, Germany, had a similar experience, the final outcome of which forms an important link in the history of the mydriatic action of belladonna.

This is the beginning of his story:

"When a novice in the Hamburg pharmacy of my uncle, Ohrtmann, Dr. Reimar desired some extract of belladonna. The fresh herb, with its flowers and fruit, having been finely comminuted, the better to boil out and extract the tincture, a bit of herb or drop of berry juice unfortunately spattered into my right eye.

"Realizing this, I attempted in vain to remove the foreign irritant from the eye with the finger. Hardly had three minutes of the hour elapsed, the irritant action having ceased meanwhile, when a mistiness arose before the eye, which increased little by little. After quarter of an hour there was present total blindness without any pain, the other eye remaining intact."

The clerk sought the counsel of Dr. Reimar, the prescriber of the drug, and by proper treatment in three weeks his eye "was restored to its pristine integrity."

Reimar informed him that it was known that the ingestion of belladonna would produce mydriasis, but he was surprised to learn that the external application of the drug would produce this result.

The discussion of the matter with Dr. Reimar resulted in the suggestion that

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* Section on Historical Pharmacy, A. Ph. A., Buffalo meeting, 1924.

this peculiar power of belladonna might induce a harmless and temporary paralysis in the operation for cataract.

Daries, the drug clerk, began a systematic study of the known properties of the plant, searching out the literature and instituting a series of experiments upon animals, tending especially to demonstrate the mydriatic action of the drug.

Dr. Reimar has been cited as the discoverer of the mydriatic action of belladonna. Daries believed himself to be the discoverer of this peculiar power.

As a matter of fact, the mydriatic action had been known through the ages, and had been forgotten, or else put aside.

This accident of the Hamburg drug clerk led to the demonstration of the value of belladonna in operations upon the eye, and this should inspire our admiration.

Daries' work forms the basis of a thesis delivered by him as a candidate for the Degree of Doctor, at the University of Leipzig. His thesis bears the following redundant title:

"CONCERNING ATROPA BELLADONNA
BY THE AUTHORITY OF THE MOST GRACIOUS ORDER OF PHYSICIANS
UNDER THE DIRECTION OF
MASTER ANTHONY WILLIAM PLAZ
PRIMARIUS OF THERAPEUTICS, DEAN OF THE MEDICAL
FACULTY, SENIOR MEMBER OF THE NATIONAL SAXON
ACADEMY, MEMBER OF THE BOARD OF GOV-
ERNORS, "GREATER CHIEF" COLLEAGUE OF
THE COLLEGE, MEMBER OF THE ACAD-
EMY OF NATURAL CURIOSITIES.

THE AUTHOR, PETER JOHN ANDREW DARIES, BACHELOR OF MEDICINE,
OF PARCHIMO-METROPOLITANUS,
WILL DISPUTE FOR THE DEGREE OF DOCTOR, ON AUGUST 30, 1776."

Leipzig—From the Langenheim Printing Office.

A printed copy of this thesis is in the Library of the Surgeon General at Washington, and to this copy the writer was granted the courtesy of access. The pamphlet comprises forty pages, shows marks of age, and is evidently one of a few printed for use at the time of conferring the degree. One concludes that there are not many copies extant, as it is not generally referred to in the literature of the drug.

By permission of the Surgeon General a photostat copy of the book has been made, and a translation attempted, which it is hoped may find a place in some pharmaceutical library.

The thesis, written in Latin, bears evidence of hasty preparation; at times the language is quite obscure. The references cited are very numerous, but frequently in the citation the name of the author is put down without any indication as to where the citation may be found.

Daries evidently did not search the ancient or classical writers, his citations being mainly those which in his time were modern.

In his introduction Daries states:

"The hodgepodge of books which treat of poisons is so great that the most celebrated Hahn was pleased to call this century the "toxophilic," which is seen to be a most suitable name.

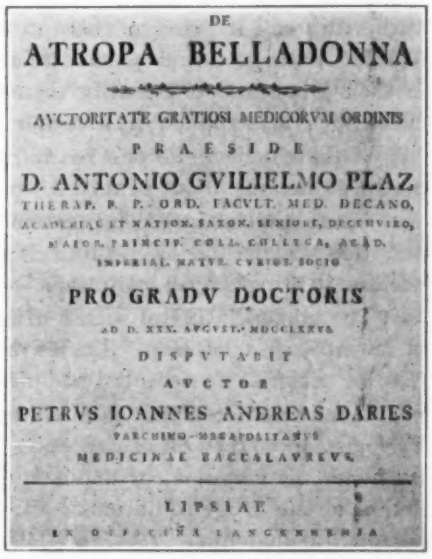
"I have especially read that belladonna is a poison, from the use of which any physician, no matter who, may prudently abstain (Blackwell)."

"Nay, more—for Lewis rejoices that it was abrogated by all authority, and was also rejected in Belgium because of many negative trials (Van der Haar).

"Hahn has said 'the question to be put is whether it is granted to an honest physician to use poisons?'

"But despite this reputation, I cannot see why I may not write of the very active poison and medicine—belladonna. Nothing seems to stand in the way of this, and I may have the good fortune to say something new concerning the effects of the drug."

Daries' own summary gives a clear evidence of his thesis: "I will first give the various names of belladonna, next the botanical characters, then the constituted principles and official preparations, then the salutary and toxic effects will be expounded, and I will adhere chiefly to the powers of the roots, leaves, berries and seeds, with the additions which are discovered after death by autopsy. Then I may add what I, myself, have observed, and last of all will speak concerning the antidotes of belladonna."


DE

ATROPA BELLADONNA

AVCTORITATE GRATIOSI MEDICORVM ORDINIS

PRAESIDE

D. ANTONIO GVILIELMO PLAZ

PRO GRADV DOCTORIS

DISPVTABIT

AVCTOR

PETRVS IOANNES ANDREAS DARIES

LIPSIAE

Title Page Reproduction Daries Thesis on Belladonna.

Section I of the Thesis is of sufficient interest to reproduce:

ONOMATOLOGIA.

"To begin with the name, it will be necessary first that we harmonize about the nomenclature of the plant. That is, about the derivation of the original roots of the given name of this drug. Before everything else we wish to keep by the beauty of language, a subject which is most to be considered.

"*Atropa Belladonna* Linnae is, according to Bauhin, a solanin narcotic poison, the fruit of which resembles that of a black cherry. That the name 'Atropa Belladonna' is Greek, every one will readily understand who is acquainted even to a slight degree with the rudiments of the beautiful Greek language, when hearing the name pronounced, that is, if he does not become disgusted with the Greek letters—Etuvxvokevavonesadoyys.

"The drug is named Belladonna—by Tournefort, Clusius, Matthioli, Tragus, Dioscorides, Raii.

"Atropa—by Royan.

"Solanum furiosum—by Camerar. Letale, by Lobel, Dodon, Clusii, Thalii.

"Solanum maniacum—by many writers.

"Belladonna I. B., Solanum bacca nigri—by Tabern, is a black berry similar to a cherry.

"Solanum cosmeticum—by Weinman, Hoffman, Opsago, Gerard.

"Beautiful wife—by Tournefort.

"German names: Waldnachtschatten, Schlafberere, Tollbeere, Irrbeere,

Walkenbaum, Marienkraut, Tollkraut, Tollwurtz, Tollkirschen, Schweintodt, Saukraut, Wuthbeere, Teufelsbeere, Willbeere, Wiedbeere, Windbeere.

"English names: Dwale, deadly raging or sleeping nightshade.

"French names: Morelle marine, Belledame.

"Italian names: Solatro maggiore, Belladonna.

"Belgic names: Groote nachtshaad oft Dulcruyt, Dulle, Besien.

"Spanish names: Yerva mora major.

"Lusitanic names: Ayura, erva, mora.

"Bohemian names: Lilek Wetsy, Psy, Wino.

"Polish names: Pfinki, Moszenky, Pfie Wisnie, Mickonky.

"Hungarian name: Zepzolo.

"Danish names: Natskade, Sovv Boer, Swine urz.

"The belladonna, with its cherry-like berries, possesses such a disagreeable, disgusting odor that beasts avoid it as they would a snake or mad dog. Some authorities call it "cussan" because of the juice of the plant that is made with distilled water, a liquid which Italian women are using to get rid of the wrinkles in their faces, and to beautify themselves; that is, to make pale their dark, rosy cheeks; it is also applied in cases of frigidity."

"Others believe, for this reason, that under the influence of the drug there are produced dreams about beautiful women and virgins.

"But Apuleius insists for certain that this name—'belladonna,' was corrupted, and that death and sleep-producing is the name—furious and maniac-making, because it brings on all symptoms with it."

The nomenclature of such a drug plant as belladonna, is of interest by reason of its intricate confusion. Daries' list is the result of an industrious search, and may be taken as an accepted résumé up to his time.

It may be noted that in many instances the names given in ancient literature were also applied to other narcotic solanums. It is likewise notable that in many instances the common, or popular, name is expressive of the peculiar power and action of the drug. The name often gives a hint of the legends and lore which surround belladonna.

Daries' description of the plant is made from direct observation of a living specimen. With a slight change of phraseology it would be accepted in our day. He speaks of a plant of goodly proportion, three ells in height.

In Section III, "Principia Constitutiva," the views of many authors as to the physiological action of the drug are given.

The curtain is raised on the mystic beliefs of the time, in an attempt to account for the, to him, unexplainable action of belladonna.

"Vegetable poisons act chiefly by a meandering vaporosity."

"The principle at once hot and sharp afflicts the nerves by tearing, and agitates the blood, lymph and other humors and spirits."

"Stenzel accuses the fault of virulence to inhere in the sulphur which, graveolent and vaporous, infects and contaminates the fluids of the brain and parts of the nerves, suppresses their powers and stops vital motion."

Belladonna had been placed under the ban by the medical men, because of its highly poisonous power. Daries therefore puts forth a strong effort in the section

"The Salutary Effects of Belladonna," to defend his thesis. It is the longest section and is overflowing with citations.

Observations upon the use of belladonna in cancer are the most numerous. The use of belladonna in cancerous affections goes back to ancient times and continues down to our day.

The use of belladonna as a soporific or anesthetic prior to surgical operations, is noted.

"The juice of belladonna berries is used for preparing a color."

The plant is used "against the diseases of cattle, especially the pestilence." It is "a preservation for animals."

"Deer are delighted with the leaves."

In a later section Daries seems to show a poisonous action against cattle.

"The poisonous power of belladonna lies in the entire plant, more, however, in the berries and roots than in the leaves."

The dog, the rabbit and the cat are not poisoned by the ingestion of belladonna into the stomach.

Daries attributed differing powers to the root, the leaves, the berries and the seeds, and devotes a section to each of these parts of the plant. Each part is poisonous in a varying degree, each part has a somewhat different physiological and therapeutic action.

The action and properties of the flowers were unknown to Daries. This in a sense is true to-day. The action of all parts of belladonna has been thoroughly studied save that of the flowers. I have never noted any reference to the presence or absence of alkaloids in the flowers of belladonna.

In recent times a sensational article appeared in public print tending to spread an alarm as to poisonous honey gathered by bees from belladonna and other solanums. This was an exaggerated alarm. If there is any alkaloid in the flowers of belladonna, the bees are immune to its action. Great quantities of honey gathered from the poisonous solanums have been eaten without untoward results. In a cultivation of belladonna, covering a large acreage, bees from a nearby apiary continuously visited the flowers, and the stored honey was eaten without harm.

It might be an interesting study for some drug clerk, following Daries, to make a special investigation of the constituents of belladonna flowers.

In Daries' thesis, and in all the literature of belladonna, whether ancient or modern, the poisonous action of the berries is the most numerous.

Certain authors ascribe poisonous power only to the berries. The luscious looking berries, tempting to the eye and the taste, fill the annals of belladonna poisoning.

The crowning work of Daries is quaintly told in the section of his thesis entitled "On Experiments Undertaken."

"Some one may now take me to task as to whether I am troubled concerning the remedy which must be devised, that may produce the desired effect better in a given disease. These various symptoms concerning which I have copiously labored, led me to think likewise of experiments conducted on animals, to see whether that phenomenon observed in my eye might also be caused similarly in animals. Therefore, about to explore the powers of belladonna myself, I sprinkled into the right

eye of a domestic cat the juice expressed from the herb, and in the left eye the juice of the berries. But it escaped me."

"If a cat or owl is placed in an utterly dark place, no light of any kind, and no light to appear, it is nevertheless reflected from the eyes, as soon as ever so little light is admitted.

"The eyes of these animals, before others, have the singular property that not only is the pupil much wider than the freer iris, and nowhere coherent to the cornea, but even the finest are pleased and moreover carry more also of aqueous humor between the cornea and crystalline humor, more remote from the pupil, but nearer to the retina, while endowed with non-pigmented choroid, and an obscure but pale flavescent or cerulean one. The conjunctival tunic of this cat, moistened with these juices by means of a feather, one hour having hardly elapsed, the uvea became dilated, much more the right than the left, so that the chink was more than tenfold larger, and indeed assumed a circular shape, when formerly this had been oblong. In the eyes, moreover, nothing was seen of disease or cloudiness. Left to itself, the cat staggered as if drunk from the beginning, but a little later it walked with its accustomed gait, its head hanging, and tried with its fore feet to remove the application from its eyes.

"After an interval of two hours the phenomenon wholly disappeared, and the narrow longitudinal chink was restored to both eyes.

"With this experiment repeated with the dry herb in the right eye and the juice of the berry in the left, in a little while the uvea was dilated to the former circle. On the following morning the dilation of the pupil had again vanished. Therefore, instituting this experiment for the third time, the same result was obtained, but with this difference, that twelve hours having elapsed the pupils remained immobile.

"From this fact the cat was subjected to the anatomist's knife of my impartial friends, the distinguished Hebenstreit and Gerischer.

"In the alimentary canal, in the chest, abdomen and brain, no alterations were found. But on investigating the eye, the uvea, quite towards the wall of the sclerotic, to which the choroid adheres, was flaccid and at the same time retracted in such manner that the pupil was tenfold larger than is found in the normal cat. The aqueous humor was clear, the vitreous indeed thin, almost watery, but nevertheless was quite soft."

"Likewise Rossi writes, 'dogs, cocks, chickens and small birds are disturbed by no sign of inflammation nor by pain, when their eyes were touched with a feather wet with the juice.' With two of the birds, a swallow and a lark, this experiment was carried out in the prescribed manner, and it is testified that this agrees perfectly with the truth, for the two birds developed no symptoms, the juice applied being gradually absorbed by the lacrymal points."

"This phenomenon observed in the eyes of the cat, does it fully correspond to the observation of Raius, which I have given elsewhere?"

"The illustrious Van Swieten contends that paralysis of the pupil following a specimen of the *Solanum furiosum*, applied to an ulcer, was readily able to relieve it."

"This opinion, compared with the judgment of Dr. Reimar, concerning the application of belladonna as bound to induce a harmless temporary paralysis of

the eye in order that extraction of the lens may be more readily carried out, seems to me to agree excellently. Finished, therefore, is the copious discussion concerning the powers of belladonna, the salutary as well as the poisonous, which although possibly too lightly composed for a polished disputation, I submit to the judgment of the World of Letters."

Another drug clerk, more than forty years after Daries, in preparing a prescription, had a similar accident that led to important results in the study of the mydriatic action of belladonna and allied solanums. This is the story of Runge, afterwards famous for his work on aniline colors:

"In 1810 I, a pastor's son, from the country near Hamburg, was sent to Lubeck, and placed in the Rathsapotheke as an apprentice.

"It was during this service that I had to prepare a medicine according to a doctor's prescription, in which a decoction of the juice of hyoscyamus was to be dissolved in water. Preparing the medicine in a mortar, a drop accidentally got into my eye. I experienced no pain, and did not observe any alteration until sensations of light flashes caused me to go to the looking-glass. How great was my astonishment when I saw the change that had taken place in my eye. The iris had almost wholly disappeared, and the eye looked precisely like that of a man suffering from amaurosis. The power of vision was also greatly weakened, as I noticed when I closed the unaffected eye. I don't know why this state of things did not raise any fears in me. After lasting a few days, the abnormal condition disappeared, the power of vision returned, and also the normal proportions of the iris, so that both pupils appeared again of equal size."

This drug clerk, knowing nothing about the work of Daries, now began an investigation as to the cause of his experience. The first use he made of his discovery was to dose a fellow townman's eyes so that he could escape military duty by reason of defective vision.

He tells his story as follows:

"At the University in Jena, I became acquainted with Dobereiner, and discussed with him my researches about vegetable poisons, especially the *solanaceae*. Dobereiner appeared pleased with the methods instituted by me, and the results of my investigations; he constantly stimulated me to new researches.

"About this time I met Goethe, at the instigation of Dobereiner, who had told the poet that by experiments upon cats I had found a method of ascertaining with certainty whether or not a poisoning with stramonium had occurred. Goethe had thereupon expressed the desire to meet the young chemist, and to see the demonstration of his discovery.

"When I crossed the market square in the afternoon, dressed with a borrowed frock coat and stovepipe hat, and carrying the cat under my arm, I created a universal sensation. The boys who were loitering about the place, at the cry 'Doctor Poison,' suddenly came towards me, and surrounded me. To those joking at my fantastic appearance I said, 'Let me in peace. I am attending to some important business. I am going to Goethe.' I was instantly released.

"Coming to Goethe's house, I was led into the reception room, and soon seated before the poet. His lofty, handsome and powerful presence made such an overwhelming impression upon me, that, all in a tremble, I handed him the cat, as if

I wanted to defend myself. 'Ah! so,' said Goethe, 'that's what is going to be the future terror of the poison-mixers. Just let me look.'

"I then turned the cat's head so that the light struck both eyes simultaneously, and the difference between the eyes could be readily seen. Goethe was greatly surprised. Alongside of the small slit in one eye, the round great opening in the other presented a very striking difference. In consequence of a somewhat large dose, the entire iris had almost become invisible, thus enhancing this singular aspect.

" 'How did you obtain this effect?' asked Goethe. 'With hyoscyamus, your excellency,' I answered. 'I have placed the unmixed juice of the pounded herb in the eye, therefore the action is so strong.' 'Dobereiner told me,' said Goethe, 'that hyoscyamus, belladonna and stramonium act alike, and that you have ascertained that the active toxic principle is contained in the plants in all of their parts, from the root to the blossom, fruit and seed, How is it with other plants, especially those of an affiliated relation?'

"A friend of mine, Dr. Carl Heise, induced by the peculiar action of the stated plants, has shown in an elaborate work that only the plants of the three orders mentioned above affect the pupils in a mydriatic manner. He has tried the action of innumerable other plants on the eye, and found them all to be inert save a few which produced the reverse of mydriasis, *viz:* a contraction of the pupil, such as *aconitum.*

" 'Well,' Goethe said, 'there is a chance to discover the proper antidote for the toxic action of belladonna. Try this, and apply both antagonistic plants either simultaneously or one after another to the eyes of a cat. Observe the result. The matter is not without difficulties, but you will overcom th se.' "

Runge tried to utilize his discovery practically at once, for he recommended in his inaugural dissertation ("De Novo Methodo Veneficium Di judicandi," Jenae, 1819), in a case of suspected solanum intoxication, to place a drop of the urine of the poisoned person into the eye of a cat. The word "atropine" does not seem to have been known to Runge, for the solanacea alkaloidal bodies, isolated approximately by him, he called "koromegyn" (Greek-magnifier of pupil). The alkaloid atropine was isolated properly in 1830, by the apothecary Mein, and independently of him in 1832, by Geiger and Hesse, while Liebig determined its chemical formula.

Here we have a series of ordinary drug clerks, without the advantages of modern education or modern laboratories, with no knowledge of modern pharmacological methods, carrying forward a most important drug research that in its final outcome bestowed unmeasurable blessings on the human race.

The end was to establish the mydriatic action of belladonna and the mydriatic solanums for all time, and to give to the world—Atropine.

There are many worlds yet to conquer, even in belladonna. On my desk as I write is a jar of sticky stuff that was extracted from belladonna without the use of alcohol or other ordinary extractive solvent. It is a gluey mess. Its mydriatic action is more than one hundred times that of an equal weight of the drug. What is it? What is its use? I do not know.

There are many drugs on our shelves of which we know but little regarding their constituents, properties, or uses. They await some drug clerk, accompanied by the drug-store cat, to enter in and occupy the land.

SERVICE HELPS SUCCESS.*

BY E. H. BRECKON.

Service Helps Success. Now there is no argument to this proposition, it certainly does, and it does not matter whether it be in the Drug business or in any other line of trade or profession; poor service leads to poor business; good service leads to a good business or trade.

I remember while touring from Los Angeles to San Diego, California, I drove into an old Mission town and being in need of some motor fuel we pulled up to a filling station and before I could get out of my car an attendant was filling the radiator of my auto with water and then asked what he could do for me. I told him what I wanted and he promptly gave it to me and, by the way, this attendant was dressed in a white duck suit that was white, a white cap; his shoes were well cared for and this at a filling station. And for this service and for this gentlemanly attention I paid no more than at other places.

I can to this day see the surroundings, the bend in the road, the old Mission opposite, and I certainly would not pass that way ever in the future without stopping to purchase something, if I could possibly use anything they had for sale.

I have always made it a rule in my store to let it be known to all of the help that all customers should be treated and waited upon as my help would like to be treated were they on the opposite side of the counter.

I do not mean by this that it is necessary to make a slave of one's self to satisfy customers; I hardly think it is necessary to deliver postage stamps, for instance, to every able-bodied individual who is perfectly able to walk to the store; still, there are occasions when this service is advisable. Neither do I think it necessary for the store to deliver sodas to perfectly healthy women day after day for them to enjoy upon their verandas, though there are times and circumstances when it is good business to give a service of this kind; women sometimes are not dressed for a trip to the store but may be just as hungry for a soda after a house-cleaning, as we men are for a cigar after a hearty meal.

Therefore I say use judgment in your service and in doing so it will be appreciated by those receiving it. It is good future business advertising; do these things in a reasonable way and do not make yourself a slave in this service, but do it as you would like to be served in a like position.

There was an interesting discussion on "service" in this branch Tuesday, and there is not a druggist in business or out of it, if you please, but must recognize that good service pays.

A salesman called upon me one day and had a sales help or some sort of advertising which he was promoting. After listening to his story I told him that I was not interested and he asked why? I told him that we had a better one whereupon he inquired what it was and asked if I was willing to divulge it.

I told him that what I had in mind was Service—the best that we could give at all times, tempered with common sense. He looked over my force of clerks and said, "Mr. Breckon, if you work that to the limit with your help, there is no sales help that will equal your service nor anywhere near approach it." He thanked me for my time and departed, leaving a good impression upon me. Some day he may sell me his idea.

* Section on Commercial Interests, A. Ph. A., Buffalo meeting, 1924.

Another example of service that helped success: Several years ago a young artist was engaged to paint—for a catalogue house selling flower seeds—Sweet Peas from a natural bunch of the flowers. He did so but the colors were not as bright as the proprietor thought they should be and he asked the artist if he could not brighten them up a little. He looked at the flowers he had painted from and said, "they look true to color;" but, said the man, "those are wilted and faded, just touch them up, if you will."

The young artist asked if he could not have a fresh bunch to paint from. The flowers were given him and he painted an entirely new picture, submitted it for inspection making no comment about extra time and material and to-day he is still painting for this same firm. That was several years ago. "Did service pay in that instance?" It certainly did!

Service in a drug store of the right kind is the greatest trade producer, but it must be linked up with a clean store, bright fresh windows, a clean up-to-date stock, and to this let me add—as complete a stock as is possible to carry for the capital one has had and for the trade one serves. This necessitates a very active want list kept right up to the second; and when I say second, I mean just that; for, if you neglect to use the want list at the second you should, you may forget the next second and your next sale of this article may be lost.

Tuesday, the necessity of women's help in the drug store was mentioned and I quite agree that a young lady graduate is just as essential to a store to-day as a man. I have found them invaluable in the prescription department, the stationery and toilet goods departments. They are usually more accommodating than men and have far better taste in arranging goods in an attractive way, thus giving better service for the store and to the customers.

Several years ago I happened to be passing through Toronto and while waiting for train connection I wandered up town and into a very small cigar store; this store had a four-foot candy case in which was displayed, I should say, not more than a dozen boxes of candy; in front of each box or adjacent to it was a price card designating what it sold for; it gave me an idea for my store and I became so absorbed in the idea that I was going to leave the store without cigars when the proprietor asked if there was anything that he could do for me. This latter query awoke my cigar hunger; his alertness was service to me and a profit to him.

I carried the price tag idea back to my store and now every box of cigars is marked on the lid—the price that they sell for; every box or every variety of candy has its price ticket; every Kodak and every box of stationery has a price, visible to the customers; all toilet articles in show cases have price tickets displayed—you may ask, "what has this to do with service?" Just this, your customers are often in a hurry and while waiting for a moment they can decide upon the article they want and the store can give them quick service; this price marking very oftentimes makes a sale, when if the customer did not know what your price was, he would not ask. Consider these little things as service and cash in on them.

There is another kind of service that leads to success or helps it—it is vital to the success of the owner and that is the service the help renders the owner; such as arranging stock, keeping the want list alive, offering suggestions for improving the store and last, but not least, the service to the customers as outlined in the first part of this paper.

Do not be small about making exchanges, replace faulty goods, especially the better and more expensive rubber sundries; if a prescription is brought back which the customer says does not taste the same as or is of a different color from the last, you are doing a good service for your business by offering to refill it, checking up very carefully and then, should there be a slight difference in color, explain; the mental effect is, in nine cases out of ten, a wonderful stimulent to your future business. Let the arguing druggist tell the customers the prescription is all right and he knows it and that is all there is to it; when this customer has a prescription to be filled some one else will fill the next one for him.

All large business concerns to-day are recognizing the worth of good service. The banks are advertising to the public the service that they are willing to render, the railroads are doing likewise, and even the United States Government is telling the people about the service they can give them in different ways. How much more should we, the retail druggists of this country, put our efforts forward to render our customers and the public the best service in our power to give and with this giving receive success in proportion to the service that we render.

There are two mottoes that could well be displayed in the back room of the store for all engaged therein to see each day—first, consider the customer as nearly always in the right, and second, treat all customers as you would like to be treated.

ABSTRACT OF DISCUSSION.

F. W. E. Stedem inquired whether Mr. Breckon considered the service of women more satisfactory than that of men in the prescription department.

Mr. Breckon replied he did to a certain extent. He had now a young lady in that department, who had been in the store for 10 years. She is a graduate of the University of Buffalo, and her service is more satisfactory than that of several young men, formerly in his employ.

Mr. Stedem said this did not agree with his experience; he considered women good as clerks, or in part time work in the prescription department, but it seemed that continuous work as prescriptionists was too much of a strain for them.

Mr. Breckon said the prescriptionists in his stores also waited on customers, there was not sufficient work in the prescription department to keep them constantly employed.

Mr. Stoddard said that his experience was about like that of Mr. Breckon's. He was paying some of the women larger salaries than men, for he believed that salaries should be fixed according to results, sex should cut no figure. Quite naturally, his experience varied with the individuals.

LINKING MEDICINE AND PHARMACY.*

BY L. E. SAYRE.

A reversion to the old time inclusion of pharmacology, etc., in the medical curricula seems to be assured. The first steps have been taken.

Specializing in medicine, where the graduate plans his work to be done in a single branch of public service, has grown to such an extent that the treatment of a single patient in a family may call for successive collaborative visits from three or four "specialists"—no one of whom regards the "case" as being in his restricted personal charge. Three or four bills greet the *pater familias* when the sick one has recovered, in the place of the one that the "family doctor" used to tardily present.

* Section on Education and Legislation, A. Ph. A., Buffalo meeting, 1924.

The "all-round" general practitioner of medicine has become so nearly extinct that the people who need his services are doing the demanding, only to find that the well-versed "old fashion doctor" is hard to discover. The old style physician is asked for because the new style doctor is not fitted for the work—he is over-educated perhaps in connection with a side specialty of practice and quite often untrained or potentially ignorant of the things helpful and necessary for the practice of a general medical control of the sick.

The rich, well-to-do people who are able to pay for collaborating services in connection with cases under the control of the accepted doctor who looks after the family will always do so; but the poor people cannot and do not want to. What with the tyranny (and sometimes insolence of ignorance) of "trained" nurses and the visits of collateral attending specialists, a "spell of sickness" becomes a catastrophe to many an average family.

The always-to-be-expected lapses from a condition of health do not need much more than home nursing directed by a family doctor. The neighborly interest of the latter affords him an opportunity to discover or foresee approaching serious ailments and if a specialist is needed for special master-service the general practitioner will so advise.

The foregoing statements were prompted by the published announcement that the University of Michigan has inaugurated a combined curriculum linking medicine and pharmacy. This course will give the medical student, exceptionally well, his general pharmaceutical and biological chemistry, bacteriology, materia medica, posology, therapeutics, microscopy, urinalysis, blood-testing, etc., and make him more than merely receptive for the special work of the medical school. The course covers 7 years and leads to the degree of Bachelor of Science in Pharmacy and Doctor of Medicine. Four years of Pharmacy and four of Medicine are embraced in it, but because some subjects appear in both courses, a year's reduction of time is possible. If a young man goes through grades and high school without a setback, he should be able to get his final degrees at the age of 24 or 25, which is an ideal age to become a doctor.

Let it be hoped that the Michigan idea is but the beginning of what all schools will feel prompted to do. It is a long time ago since the M.D. degree was obtained by study in two all-day winter sessions of six months each. Science as we know it to-day is all new since that time. Days are substituted for hours in medical colleges now and months for weeks. Even then the time is not sufficient.

For years it has been an almost provable fact that the prerequisite education necessary to favor the assimilation of medical knowledge is that evinced by the possession of a pharmaceutical degree. If it is arranged so that both courses may be prosecuted together by dove-tailing at proper places, the combined curriculum is to be welcomed by all concerned. It will give joy to the pharmacist to have assurance of the doctor's sympathetic insight into the problems he meets, and also to know that there may be more general practitioners for the less populated districts, not to mention the possibility of a growth in real prescription business.

BRANCHES OF THE AMERICAN PHARMACEUTICAL ASSOCIATION IN SCHOOLS OF PHARMACY.*

BY E. V. KYSER.

Two courses lie open to anyone presenting the function and the possibilities of any branch of our association: One is to theorize on the possibilities of the function of a branch; the other is to give an account of the actual operation of a branch in existence and to attempt a forecast of its future.

I ask your indulgence in giving an account of the activities of the University of North Carolina Branch of The American Pharmaceutical Association from the time of its inception, scarcely two years ago, until the present time, as well as the future possibilities of this organization.

There is a great need for the organization of some kind of pharmaceutical association or society in schools of pharmacy whereby students might enjoy social and educational fellowship. It was to the realization of this need on the part of the students and the faculty of the University of North Carolina that the present branch of the American Pharmaceutical Association at that seat of learning owes its existence.

Not only does a local branch offer all of the advantages, both social and educational, that can possibly be derived from any kind of association or society that may be organized in a school of pharmacy, but it also allows the enjoyment of many privileges that cannot be obtained elsewhere. Such a privilege would be the sense of security and pleasure in the consciousness of being an integral part of a national association devoted to the scientific and ethical development of one's profession. Moreover a local branch affords a very happy medium in which faculty and students may work together in the advancement of pharmacy. Also without the embarrassment of encroachment, it gives the faculty an opportunity to assist in the direction of the affairs of the branch where otherwise they might feel sensitive about giving advice in associations or societies organized by students as a part of student activities. Most student organizations require dues, for social and other purposes. Such dues would hardly be less than our annual fee of five dollars, which pays for membership in both the local and national organization, a year's subscription to the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION and YEAR BOOK. These inducements are sufficiently attractive and well worth the fee exacted for membership. But they are not all—the Association also confers a certain prestige. Furthermore, the Association enables us to arrange programs that we could not arrange without its help.

The University of North Carolina Branch of The American Pharmaceutical Association was organized on October 7, 1922, in response to a request from the students of the School of Pharmacy for assistance in securing a pharmaceutical society that would permit greater activity in pharmaceutical advancement than they had previously enjoyed in their local society.

It began with sixteen charter members. In 1921, the year before its formation, there were only twenty-nine members of the American Pharmaceutical Association in the State of North Carolina. The membership in previous years had never exceeded thirty-two members in any one year. In the year beginning 1922 and

* Section on Practical Pharmacy and Dispensing, A. Ph. A., Buffalo meeting, 1924.

ending in 1923 there were fifty-six members and in the year beginning 1923 and ending in 1924 the membership has been increased to one hundred and sixty-one. Of this total membership in the State, one hundred and thirty-one have become affiliated with the local branch. The membership in the Local Branch, includes seventy-one students who joined the Association through the Branch; twenty-nine who were members during 1921, and a number of those who were secured by the Association's holding its meeting in Asheville in 1923. The YEAR BOOK for the years 1922 and 1923 are not yet available and this total of membership necessarily includes some who have not retained their membership during the last two years.

In securing the membership of students we find the greatest difficulty among the first-year students who have not contemplated membership and as a consequence they have given no consideration to this fee in their school budget. Once in school it is oftentimes very difficult for some students to secure this additional amount required for membership. In the past two years a very large majority of the senior classes finally became members. This year we have adopted a card invitation, to become a member of the branch, which is mailed to those who have registered for the Junior courses. We believe that as a result of this invitiation, that many more Junior students will be financially prepared to become members upon entering school this year. A copy of this invitation is reproduced here.

The University of North Carolina Branch
of The
American Pharmaceutical Association
Heartily welcomes you
to
The University
and
Cordially invites you
to
Become a member
of The
University Branch of the A. Ph. A.

The reverse side of the card bears the following information:

"The University of North Carolina Branch of the American Pharmaceutical Association is affiliated with the National Association and its purpose is to afford a medium for pharmaceutical advancement. One or more meetings are held each month at which both social and educational programs are enjoyed. Membership in the Local Branch also includes membership in the National Association and enjoyment of all its privileges, including a year's subscription to the JOURNAL and a copy of the YEAR BOOK. The annual fee is $5.00 for membership in both the National Association and the U. N. C. Branch."

We have used many other methods of stimulating membership by inaugurating direct contests among teams appointed for the purpose of securing new members. These drives for membership are usually started just before some unusual social or special meeting that has stimulated interest in the branch. Each year we send out a letter, with a return card, to members of the American Pharmaceutical Association in the State asking them to become affiliated with the Local Branch; we require no additional fee for its support. We also send an invitation to all of the members of the Association in the state requesting their presence at the annual out-

ing and fishing trip which is given complimentary to members of the Local Branch by Prof. E. V. Howell, Dean of the School of Pharmacy. This occasion is one that is greatly enjoyed, and it proves to be an added inducement for greater activity and fellowship among the members.

During the two years that we have been organized we have had sixteen regular meetings other than those held for social and business purposes. There has been presented before the members a total of twenty-six addresses, lectures, and papers on subjects of scientific and educational interest. Fifteen of these have been lectures which were illustrated with lantern slides, and eight of these have been presented by persons who came from without the state. Student members have presented a total of eleven subjects, and five of these were illustrated with lantern slides.

In the arrangement of programs we have been fortunate in securing the cordial coöperation of a number of the large pharmaceutical manufacturers, who have been kind enough to send us lecturers on subjects of timely interest. This coöperation, which was, no doubt, partially due to our affiliation with the American Pharmaceutical Association, has been of immeasurable benefit to the members of our Association and to pharmacy as a profession in the state.

We have been accorded every consideration by the newspapers of the state in announcing our programs and in giving publicity to our meetings. Seven of the National pharmaceutical publications also have kindly given space for the reports of our meetings. This publicity is just and justifiable inasmuch as the branch is in no small measure a contributing factor towards training ethical pharmacists who will in the future practice their profession in the state. It is to them that the state must look for the conservation of public health and useful citizenship.

The effectiveness of the publicity that is given to our programs by the press of the State may well be illustrated by the attendance at our meetings. At one of our meetings this year we had what was estimated to have been the largest audience ever to attend a scientific lecture at the University. It was gratifying to see so large a number of physicians who had come from many sections of the state to attend this lecture—some from a distance of 200 miles.

In order to keep the members of the branch in the state informed of the activities of the branch, and also to assist the American Pharmaceutical Association in maintaining membership, as well as the collection of funds for the Headquarters Building, we have prepared the card that is reproduced below.

The University of North Carolina Branch
of the
American Pharmaceutical Association
Respectfully calls your attention to

Program———————————————————————
Renewal of Membership———————————————————————
Pledge for A. Ph. A. Building Fund———————————————————————
Date Effective———————————————————————

———————————————————*Secretary.*

It is our purpose to conduct our local branch with ever increasing forcibleness in the direction of promoting the ethical practice of pharmacy as a profession. We shall enlarge our programs and increase our activities to meet the needs of our

existence. It is hoped that the next year will find us equipped with social rooms where we may meet informally and discuss topics of pharmaceutical interest, and in which we may be favored with weekly lectures by members of the faculty from other departments of the University.

We believe that the mind of the student, if directed rightly in regard to his profession, will retain and practice that which we instill. It is the ideal of the Local Branch to continue in its efforts for the advancement of pharmacy as a profession until every pharmacist in the state of North Carolina is a member, and until every member practices his profession in accordance with the principles contained in the Code of Ethics of The American Pharmaceutical Association.

EXAMINATIONS AND THE FUNDAMENTALS.*

BY J. W. STURMER.

A few years ago a set of examination questions used by Thomas Edison to pick promising candidates for his employ was given to the press. Forthwith it became the subject of a lively discussion in which professional educators, journalists, humorists, musical comedy artists, and the members of the Whitlers' Club from Rosin Center, took lively part. What, indeed, more vulnerable to criticism than a set of examination questions? The callowest freshman does not hesitate to find fault with the questions of the most venerable professor;—and Edison soon found himself assailed from every quarter.

To silence his numerous critics, he finally said that the sole purpose of his examination was to pick the candidate with a good memory. But memory, as everybody knows, cannot function until there is something to remember. And college men proved that a large portion of the questions covered ground outside the purlieu of a conventional college education. It appeared that the same could be said about school and high school, all of which is interesting, for it proves that Edison had inadvertently tested for something besides memory. He had picked the candidates with the inclination and the ability to gather knowledge from many sources—men of alertness, with wide-spread interests—in short, the "live ones," and of good memory.

A pharmacy board examination is devised to serve an entirely different purpose, namely the exclusion from registration of those candidates who may not reasonably be expected to function as safe and competent practitioners of pharmacy. Edison's test as it was conducted, would set the bars too high. His test as he viewed it—a mere memory test—would be inadequate, for a pharmacist must not only have knowledge, but must also know how to use it. He must know facts—yes, and likewise principles. Of the latter he must have clear understanding so that he may apply them, for in practice there arises an infinite variety of problems—too many to be memorized, and which can be solved only by the application of what, for want of a better word, we call theory.

Let us, however, not belittle the value of memory, or of memorized knowledge. When we say we know, we mean that our memory holds in store the facts, con-

* Read before Joint Session of the National Association of Boards of Pharmacy and American Conference of Pharmaceutical Faculties, Buffalo meeting, 1924.

cepts, near-facts, or fancies, which bear upon the case. When we reason, we depend largely upon our memory-store to supply us with material with which to carry out this mental process.

Now in every profession or vocation, certain facts and certain generalizations or principles are used frequently; others but seldom. Those which are often used, and particularly, if they help us to correlate other facts and to understand them, constitute the fundamentals. A candidate who is not familiar with the nomenclature of science, cannot read its literature understandingly. If he does not know the significance of chemical formulas, is not familiar with the basis of the chemical classification of compounds, does not know the make-up of an acid, a salt, an ester, an ether, etc., he cannot study his pharmacopœia with profit. In other words, what the candidate must know in order that he may have a reasonable chance of finding and understanding what he does not know, but must look up in the literature, is fundamental knowledge. Without this, obviously, there can be no growth, no development. In analytical chemistry, for example, a knowledge of volumetric solution, and of factors, is fundamental. The detailed procedure of determining phosphorus is not. And with a knowledge of basal volumetric principles, a specific process may be looked up when needed. * * * * Hence the necessity of distinguishing between the fundamental and the incidental.

In a test of the type of Edison's covering the fundamentals is not so important. In pharmacy board examinations it is essential. And anyone familiar with the character of recent state examinations knows that our boards are quite generally cognizant of this fact. But it is also essential that the candidate be able to put into practice his knowledge of these fundamentals, and in order that he may do this, he must have studied with understanding, and not learned by rote. Memorized definitions, and generalizations of science are not real knowledge; at best they are only potential knowledge, just as a black walnut in a boy's pocket isn't edible and assimilable—isn't food—until he has contrived to crack it. Occasionally one meets, in grading papers, the most astonishing malapropisms, showing that the candidate had no idea of the meaning of the phrases he had learned,—reminding one of the little tot, who, joining in our national hymn, America, sang lustily, "I love thy roxorills, thy woosy pimpled bills." But even though a definition, or a generalization, be given letter-perfect, we cannot be sure of its meaning or purpose having been understood. For this reason it is far better to frame the question so that its answer *will involve the application* of textbook knowledge. Better a simple problem involving the use of specific gravity, than to ask "What is specific gravity?" Better some practical question on processes involving the use of a catalytic agent than to ask for a definition of this type of substances,—better, for the answer, will constitute assimilated, and hence usable knowledge. The other type of answer may, or may not.

Nor can one be sure that the candidate has done some reasoning of his own if he answers a question beginning with "why," for answers to 'whys' are not always studied as the authors intended that they should be, but are sometimes learned verbatim as a simple memory feat, in which case we have another parallel of the boy with the black walnuts, but with the distinction that the boy does experience a strong biologic urge to look for a rock, while our candidate may or may not have such intentions.

Briefly, then, the fundamentals in pharmacy are the basal facts and principles of the sciences upon which pharmacy is based. They comprise what a pharmacist must know and clearly understand in order that he may use his text and reference books—in order that he may grow in knowledge and efficiency—in order that he may deal satisfactorily and successfully with the tasks and problems which arise in everyday practice. It is the theory—if you will—of which he should have clear understanding in order that he may be really and truly *practical.*

It is, therefore, what the examiner should embody in his set of questions, for it is such knowledge, rather than familiarity with curious and isolated facts, that determines whether the candidate may reasonably be depended upon as a safe and competent pharmacist.

To be sure, it is no easy task to frame such determinative tests. They cannot be culled from textbooks. They require original work, and work of a high order. But they make for the results which are desired. The labor involved is therefore a distinct public service of a high order.

THE COMMONWEALTH STUDY OF PHARMACEUTICAL EDUCATION.

BULLETIN No. 2.

This is the second of a series of twelve monthly statements to be issued by the staff conducting this study, to acquaint the profession with the progress of the study.

From its inception the Commonwealth Study of pharmaceutical education has enjoyed the unqualified endorsement of all the leading organizations interested in pharmacy. This hearty endorsement has been supplemented by active coöperation of the American Conference of Pharmaceutical Faculties, The American Pharmaceutical Association, The National Association of Retail Druggists, The National Association of Boards of Pharmacy, The United States Department of Health, the faculties of both Medical and Pharmacy Schools, and many individuals who will be given full credit for their support when the final report is published.

A committee was early selected to act in an advisory capacity to Director W. W. Charters and his technical staff. On this committee are men eminently qualified for the work by training and inclination. The committee includes men whose interests cover the entire field of pharmacy. The personnel of the committee is as follows:

Chairman, Dean J. A. Koch, Pittsburgh College of Pharmacy; H. C. Christensen, *Secretary* of the National Association Boards of Pharmacy; Dean C. A. Dye, School of Pharmacy, Ohio State Univ.; Dean C. W. Johnson, College of Pharmacy, University of Washington; Dean R. A. Lyman, College of Pharmacy, University of Nebraska; Dean W. F. Rudd, School of Pharmacy, Medical College of Virginia; Dean H. H. Rusby, New York College of Pharmacy; J. H. Webster, *Ex-President* of the National Association of Retail Druggists; Dean W. H. Zeigler, *President* of American Conference of Pharmaceutical Faculties.

The Advisory Committee has met twice for three-day sessions in Buffalo, New York.

As rapidly as parts of the study are completed they are submitted to sub-committees of experts for criticism and advice. Dean Rusby is chairman of the sub-committee of Botany and Pharmacognosy. Dean Dye is chairman of the sub-committee on Practical Pharmacy, Dean Rudd is chairman of the sub-committee on Chemistry and Dean Lyman is chairman of the sub-committee on Physiology and Pharmacology.

Obviously the practice of Pharmacy may be divided into three major sub-divisions as:

1. Filling of prescriptions.
2. Answering queries relating to pharmacy.
3. Conducting the commercial side of the business.

The first two duties only are being considered in this study. Subsequent bulletins will explain how the knowledge, skill and ideals necessary to perform these duties is being compiled.

THE DEPARTMENT OF THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES

IN THE PERIOD OF TRANSITION.

BY ROBERT P. FISCHELIS.

DEAN, NEW JERSEY COLLEGE OF PHARMACY.

The past quarter of a century has witnessed rapid changes in the character of the retail drug business and equally rapid changes in the methods of treating the sick, involving the development of biological and chemical agents of medication.

The change in methods of training pharmacists in colleges of pharmacy to meet the new conditions has not been so rapid. In fact the tendency has been so strongly against the introduction of anything new into the pharmaceutical curriculum that whatever criticism one hears of our courses of to-day is directed against the extreme conservatism of our educational institutions and not against any attempt to modernize the courses. There is now an unmistakable demand to make such changes or additions in the courses offered as will fit students of pharmacy better for the work that is expected of them when they take up their business and professional activities.

The original extreme opposition to the high school graduation requirement and to the three-year pharmacy course is happily a thing of the past and it is now only a matter of a few years when minimum educational requirements for pharmacists will be higher throughout the country than even the most sanguine considered possible a decade ago.

There are still a large number of pharmacists who feel that the training *they* received was all-sufficient even though they will freely admit that there is much of the chemistry, pharmacodynamics and even pharmacy involved in recent revisions of the U. S. Pharmacopœia and National Formulary which they do not understand. They cite the merchandising trend of the retail drug business as ample proof that no further professional training is necessary but insist that more attention should be given to business administration. They forget that the pharmaceutical training which they received at college, fifteen or twenty years ago and more, was often augmented by thorough training in a pharmacy under the apprentice system or a modification of it. The drug stores where students of pharmacy can now obtain real professional training are few in number, not because there is a dearth of professional work, necessarily, but because the tendency to departmentize drug stores has had the effect of relegating the student clerk to the sales counters where he can earn his pay, and leaving the compounding and dispensing to registered pharmacists or assistant pharmacists. The installation of modern business methods in the retail pharmacy, practically requires the elimination of the training features of the store. It is expected of the colleges that they assume this responsibility and they should. But it is manifestly unfair to expect the college to give the same training in two years which was formerly acquired in at least four and sometimes six years, based on the combined college and drug-store experience requirement.

That there should be a difference of opinion as to the scope of the training to

be given in the enlarged college course and what drug store training should be required in addition, is but natural. We have on the one side the extreme view that all necessary training for the practice of pharmacy may be acquired at a college of pharmacy as exemplified by the present regulations governing the practice of pharmacy in the state of Virginia. Realizing its great responsibility under these regulations, the College of Pharmacy in that state provides prescription experience in connection with hospital dispensaries and trade experience in a practice drug store in charge of a successful retail pharmacist.

On the other side we have the recently promulgated regulation of the New York Regents to the effect that applicants for admission to the pharmacy courses in New York Colleges must have had two years of drug-store experience in addition to being high school graduates, to take effect in 1926. This does not affect the total experience requirement of four years necessary for registration as a pharmacist in that state, but two years of experience in a drug store must have been had before the beginning of the college course. Requirements elsewhere will range between these extremes and it is not unlikely that experience will have a tendency to modify them as time goes on.

Some consideration must be given to the effect of radical changes upon established customs and institutions. There is the reciprocity situation, for example. Much excellent work has been done to build up reciprocity agreements between the various states and in the building of these agreements there has been a raising of educational standards all along the line. By well-directed, coöperative effort we can keep up our present rate of progress and at the same time preserve that which has been built up so laboriously.

The matter of the so-called three-day a week course is the subject of regulation on the part of some boards at present. Those who have studied the situation impartially have seen the handwriting on the wall for some time in this connection. It is becoming increasingly difficult for the colleges to take over the responsibilities referred to earlier in this article and arrange a schedule satisfactory to students and instructors alike, on the plan of giving instruction on alternate days and assuming that the student works in a drug store on the other days. There are stumbling blocks in the way of changing from the three-day to the five- or six-day plan but these can be overcome and will be overcome in a few years. Pharmacists who employ students will have to be educated to the change and colleges now planned and built for the three-day schedule will have to enlarge their facilities. A reasonable time must be allotted for this change because it involves the altering of a custom of long years' standing and it is not nearly as vital as the high school and three-year course requirement. In fact the tendency in engineering schools is to alternate college work and shop practice throughout the course. The present three-day alternating pharmacy course is not exactly comparable because the pharmaceutical institutions exercise no supervision over the practical drug-store work of the student. We are groping for the best solutions to very important problems and some experimental work is necessary. Pharamceutical historians of the future will place the proper value on these experiments. No one is competent to judge them accurately during a period of transition such as we are now going through. A spirit of mutual helpfulness is therefore a prime essential for progress in the right direction.

THE SECTIONS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

ABSTRACT OF THE MINUTES OF THE SESSIONS HELD IN BUFFALO, N. Y., AUGUST 25–29,* 1924.

SECTION ON EDUCATION AND LEGISLATION.

The first session of the Section on Education and Legislation, A. Ph. A. was convened at 9:45 A.M., August 28, by Temporary Chairman J. G. Beard. The latter advised that Chairman A. G. Bergy was in Europe and would not return in time for the convention. Secretary William Mansfield explained there would be no Chairman's address and he asked permission to defer the report of the Secretary until the next meeting of the Section. Permission was granted.

Chairman Beard regretted that the attendance was no larger and the lack of interest brought up the question as to whether the Section had fulfilled its mission and should now be discontinued. Probably the American Conference of Pharmaceutical Faculties and National Association of Boards of Pharmacy had taken over much that entered into the programs of other years.

Clyde L. Eddy spoke along somewhat related lines; he also said that a number of sessions during the same hours drew away the audience from the Section in which a minority had interest.

E. G. Eberle said that the American Conference of Pharmaceutical Faculties and National Association of Boards of Pharmacy should participate in the program of this Section—there was an opportunity here to debate questions of joint interest and in papers and discussions outline the plans for educational promotion and prepare for legislative enactments that would serve pharmacy in general. In his opinion the Section had a mission and a very important one, because coöperative.

Charles W. Johnson stated that the Conference could very well have had another session, and this supported the thought of the preceding speaker. Arrangements could perhaps be made with the Conference and the Boards whereby this Section would include subjects—discussions and papers—which would have interest for all three organizations. He considered that there was opportunity for service by this Section.

W. Bruce Philip thought that one session, instead of two, would attract a larger attendance and arouse greater interest.

Secretary Mansfield stated that this Section was open to schools of the Conference and those that did not hold membership in it. This Section presented the opportunity for discussing ways and means for joint action.

Chairman Beard remarked that the discussion had served a purpose—that of determining whether the Section should be continued. "It is very evident," he said, "that the Section should be continued."

W. F. Rudd thought the suggestion by Mr. Philip should be considered and he felt assured that the officers for the coming year would provide an interesting program.

The first paper of the program was that of Henry J. Goeckel on "Combined Pharmacy and Clinical and Pathological Laboratory Science and Education." There was no discussion and the paper was referred for publication.

Chairman Beard named the Committee on Nominations.

A paper on "Too Many Drug Stores," by Wortley F. Rudd and W. W. White, was read. (Discussion of this paper continued during the greater part of the session, therefore made part of the minutes.—EDITOR.) The paper follows:

TOO MANY DRUG STORES.

By Wortley F. Rudd and W. W. White.†

I venture the assertion that the platitude expressed in the subject which I have chosen as the title of this brief paper, is, to say the least, the one fact about Pharmacy that nobody will

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* See also p. 964, October JOUR. A. PH. A., and p. 1067, November issue.

† Medical College of Virginia.

attempt to controvert. Further, I submit, that it comes nearer being the one answer to the oft-repeated question, "What is the matter with Pharmacy?" than does any other, single statement.

A critical analysis of the forces, which operating through the past half century or more have brought about this near chaotic condition, is a thesis with many unpleasing aspects, as such a study inevitably leads us to question the good judgment and vision of individuals and organizations that, traditionally, we have learned to respect and, in some instances, even to admire.

How we have gotten where we are is not, however, the subject of this paper. That is a matter of opinion. All of us are too close to these forces to be able to judge fairly where the responsibility for the past lies. Surely the writer realizes his own inability to analyze the subject without prejudice. He would not even mention the past in this connection, were it not that the road over which we have come inevitably determines to some extent, at least, where we will go.

I am tempted to look immediately to the future, assuming that you agree, without argument, that there are to-day too many drug stores. Lest I assume too much, however, I wish to submit just a few statistics on the distribution of drug stores in this country. I have here a table that explains itself. The data on population and area was obtained from official census of 1920. The number of drug stores in each state was obtained from a table published in the *American Druggist* for August 1924.

Taking the country as a whole—that is, dividing the total population by the number of stores—we find that the average number of people served by each store is 2236. The average area served by each store is about 64 square miles. Twenty-eight states serve a smaller number of people than this general average, and 21 a larger number. Twenty-six states serve a smaller area than the average of 64 square miles, 22 a larger area than 64, and one just 64.

The stores in Nebraska, Nevada, South Dakota, Missouri and Kansas serve the smallest number of people, the figures being—Nebraska 1407, Nevada 1460, South Dakota 1549, Missouri 1557, and Kansas 1564, while the stores in West Virginia, Virginia, North Carolina, South Carolina and Tennessee serve more than twice as many as those in the above-named states, the figures being as follows: West Virginia 3821, Virginia 3552, North Carolina 3328, South Carolina 3230 and Tennessee 3129. The area served by each store in the five states named first, are: Nebraska, 85 square miles; South Dakota, 189; Missouri, 31; Kansas, 72, and Nevada 2089, while the areas served by each store in those states having the largest population per store is as follows: West Virginia 63, Virginia 64, North Carolina 68, South Carolina 59, and Tennessee 56. The five states in which each store serves the least area, omitting the District of Columbia, are: Massachusetts 4.9, Rhode Island 4.1, New Jersey 6.4, Connecticut 8.19; New York and Pennsylvania come next with 10.6 and 14 square miles, respectively.

The urban population of the several states named above is as follows: Nebraska 31%, South Dakota 16%, Missouri 46%, Kansas 35%, Nevada 20%, West Virginia 25%, Virginia 29%, North Carolina 19%, South Carolina 17% and Tennessee 26%. Of the five states having the smallest population per store—Nebraska has two schools of Pharmacy, South Dakota one, Missouri two, Kansas one and Nevada none. Of the five states with the largest drug-store population per store—West Virginia has one school, Virginia one, North Carolina one, South Carolina one and Tennessee one, omitting the Negro school. All of the schools in the latter group are state supported. In Nebraska—one school is state supported, one is not and there is no prerequisite law. South Dakota's one school is state supported and they have no prerequisite law. Kansas' one school is state supported and there is no prerequisite law. Missouri has two schools—neither being state supported and no prerequisite law.

No very general conclusions may be drawn from the above data. The conditions surrounding the licensing of pharmacists are changing rapidly in many of the states and we are not warranted in being too sure of the "Why" of too many stores in these states. It is safe to say, however, that wherever the machinery for licensing pharmacists is over-fed, either because the requirements for registration are low, or because the schools graduate more men than are needed, too many potential proprietors are made and too many drug stores will inevitably result. To illustrate—Georgia, a mid-southern state, is credited in the "1922 Handbook of New York Educational Council" with four schools; none of them are in the Conference. The requirements for examinations are extremely low and our table shows that conditions in that state are much worse, so far as people served per store is concerned, than are Virginia, North and South Carolina, her neighbors to the north.

NUMBER OF DRUG STORES IN STATES COMPARED WITH POPULATION, AREA, AND NUMBER OF PEOPLE SERVED.

	No. stores.	Population.	No. people served.	Area served by store.
Alabama	835	1,449,661	1,736	62.27
Arizona	120	334,162	2,784	949.63
Arkansas	873	1,752,204	2,007	61.09
California	1,600	3,426,861	2,141	98.93
Colorado	592	939,629	1,587	175.58
Connecticut	606	1,380,631	2,278	8.19
District of Columbia	217	437,571	2,016	0.322
Delaware	122	223,003	1,991	21.339
Florida	606	968,470	1,581	96.80
Georgia	1,114	2,895,832	2,599	53.2
Idaho	246	431,866	1,755	341.00
Illinois	3,079	6,485,280	2,106	18.40
Indiana	1,607	2,930,390	1,823	22.62
Iowa	1,533	2,404,021	1,568	36.62
Kansas	1,131	1,769,257	1,564	72.5
Kentucky	820	2,416,000	2,946	49.5
Louisiana	666	1,798,509	2,700	73.0
Maine	407	768,014	1,884	81.0
Maryland	540	1,449,661	2,684	23.0
Massachusetts	1,687	3,852,356	2,284	4.9
Michigan	1,742	3,668,412	2,106	33.0
Minnesota	932	2,387,125	2,561	90.0
Mississippi	835	1,449,661	1,736	62.27
Missouri	2,186	3,400,055	1,557	31.0
Montana	300	548,899	1,829	489.0
Nebraska	921	1,296,370	1,407	84.0
Nevada	53	77,407	1,460	2089.0
New Hampshire	235	443,083	1,888	40.0
New Jersey	1,280	3,155,900	2,468	6.4
New Mexico	122	360,350	2,950	1005.0
New York	4,612	10,355,000	2,245	10.6
North Carolina	769	2,559,000	3,328	68.0
North Dakota	362	646,872	1,786	196.0
Ohio	2,278	5,759,000	2,523	18.0
Oklahoma	1,241	2,028,000	1,642	56.0
Oregon	415	783,389	1,887	233.0
Pennsylvania	3,213	8,720,017	2,710	14.0
Rhode Island	302	604,397	2,001	4.1
South Carolina	521	1,683,724	3,230	59.0
South Dakota	411	636,547	1,548	188.8
Tennessee	747	2,337,885	3,129	56.2
Texas	2,758	4,663,228	1,680	96.0
Utah	186	449,396	2,416	457.0
Vermont	167	352,428	2,110	57.0
Virginia	666	2,309,187	3,452	64.0
Washington	655	1,356,621	2,071	105.5
W. Virginia	383	1,463,701	3,821	63.0
Wisconsin	1,035	2,632,067	2,543	54.0
Wyoming	102	194,402	1,905	959.9

New York and Pennsylvania, with five and three schools, respectively; all of them members of the Conference, except one in Pennsylvania, and both states having had prerequisite laws

longer than any others in the Union, run about the average for the country—Pennsylvania slightly better than the average.

The writer has never heard the complaint that Virginia, West Virginia, North Carolina, South Carolina and Tennessee have too few drug stores. If then these states with something over 75% of their population rural are reasonably well served with an average per store of 3392 people, what shall we say of New York, New Jersey, Pennsylvania, Delaware and Maryland with more than 65% of their population urban and serving an average of only 2401 per store?

We might wander on indefinitely making such comparisons but they do not lead anywhere. The single thought that I have in mind is that permanent improvement in Pharmacy will come only when the present cut-throat policies are made impossible. My contention is that the way to bring about this improvement is primarily through the plan of making just as few potential proprietors as can possibly take care of the needs of the public for legitimate Pharmaceutical service.

The organizations which by close coöperation can gradually effect this change, are, first: The State Examining Boards; second: The Colleges of Pharmacy; third: The American Pharmaceutical Association; fourth: The National Wholesale Druggists' Association; and fifth: The National Association of Retail Druggists.

When these five groups realize that *fewer* but *better* trained potential proprietors, *fewer* but *better* retail pharmacies, are the way out of our present condition, I believe we will be headed toward better things.

Following the reading of the paper the author read from an editorial from a pharmaceutical publication; the parts read are as follows: "The serious question for leaders to consider is, how are these thousands of potential pharmacists annually entering our schools of pharmacy going to be absorbed? There are no doubt any number of states throughout the land where good-paying drug stores might be started. It must not be lost sight of, however, there is at present an average of one pharmacy to every 2,999 inhabitants. Is not that a sufficient number?" . . . "Is it interesting to picture what will be the situation in 10 or 20 years if the present influx of men into the drug stores still keeps up."

Robert P. Fischelis moved that the paper be received—seconded.

Jacob Diner referred to the proportionate figures of the table, stating that New York City had a population of about 10 millions, which would bring the number served per drug store to about 3,000. He also stressed the fact that in a city like New York relatively more money is earned and spent than in smaller cities and rural communities. The speaker referred also to the kind of service given because it is required by the patrons; hence, more are engaged in these stores than in pharmacies where conditions are different. "The number of stores in a given area is dependent on the people who live there," he said; "the prerequisite requirements have limited the number of stores."

The speaker said further: "With the present requirements in New York State, and the additional limitations which are being imposed upon licensing of pharmacies, we are not going to turn out less pharmacists by any means; in fact, we are expecting to turn out more, and we will have to turn out more, because where in other cities and states the one man store predominates, in New York City we have preëminently the two, three, four, five, fifteen and sixteen man store. I can safely say that the average number of men employed—and I am speaking of the licensed men—in pharmacies in Greater New York will exceed three, and I am giving that as a very low estimate.

"Taking approximately the number of drug stores in Greater New York, which is about 3400 or thereabouts, and taking the average number of men in a store as two, which is a very low estimate, lower than would meet the actual figures, we would have room for approximately 6000 pharmacists in Greater New York alone. With a graduating class of the three schools in Greater New York of approximately 600 or 700 (which we do not have, because our graduating class last year did not exceed 600), we have just barely 15 per cent. of the number of pharmacists which New York uses. With men dying and going out of business it would take us 10 years or, say 8 years, to keep up the supply. I have figured that every man who graduates goes into a pharmacy, which as a matter of fact is not so—some men use pharmacy as a stepping stone to medicine, others find employment in laboratories, still others go on the road as salesmen, etc., and quite a few drop out of pharmacy and go into occupations entirely foreign to it. So while the figures are

interesting, and some deductions may be drawn therefrom, they are not conclusive—that there is an over-production of pharmacists or an over-production of drug stores."

The speaker concluded with a reference to conditions when the sales of a pharmacy were considered very good at $50 per day and now sales of less than $200, in many stores, are below average. He also cited the changed living conditions in his immediate neighborhood where large apartment houses had taken the place of residences—the area that formerly housed a family or two now has a hundred or two families.

Charles W. Johnson said the paper had suggested to him the study of relative numbers now being served by professional pharmacies in Seattle.

A. H. King spoke of conditions in Kansas; he hoped for the time when the questionable drug stores would no longer exist and legitimate pharmacies predominate.

Charles W. Johnson said that the Washington State Pharmacy Board requires four years of high school of candidates and graduation from a recognized school of pharmacy having a three-year course, and the character of every candidate is investigated.

Robert P. Fischelis said: "Anybody who studies the situation must know that the gateway to pharmacy to-day is the school of pharmacy. Nobody can take a board of pharmacy examination in the majority of our states without having been graduated from college, and that means the responsibility is right up to the admission committee or the dean of the shcool; those he selects will be among the future pharmacists. There is the responsibility and that is where the number of pharmacists will be limited."

W. Bruce Philip contended that "every time the druggist adds a side-line he increases the possibility of more stores. The lunch counter to-day brings more money into the drug store and, therefore, inasmuch as the store has a certain income, that alone would increase the number of stores; and when the drug store takes men's furnishings, etc., it will also increase the number of drug stores. The answer is, not too many drug stores, but too many so-called drug stores."

Ambrose Hunsberger thought that Mr. Philip had struck the key-note of the situation, and said he was favorably impressed with the paper by Professor Rudd, that he was right in directing attention to an evil everybody should know of. He also concurred with Dean Fischelis in that the solution was in the hands of the schools.

The speaker said "There is a curious side-light to all of this—I have the utmost difficulty in securing competent help, and I presume that is due to the fact that everybody wants to be boss; most graduates manage to get enough credit to start a store; it is necessary, but it is too free; almost anybody can obtain credit from some wholesale drug house. In support of that, there was a sheriff's sale of a drug store in Philadelphia, the proprietor of which had managed to get into debt to the extent of about $4600 with one Philadelphia drug house. That doesn't seem economically sane. Everybody wants to be a proprietor, which partly accounts for the number of stores. The recent graduate opens up across the street and finds there isn't sufficient pharmacy work to be done, so he puts in side-lines, and we evolute from one side-line to the other, until our practice, of which we are reasonably proud, is finally submerged altogether and demoralized. If Dean Rudd's paper can start a movement in the direction of discouraging the establishment of more new stores, he deserves the thanks of this Section, and of the pharmacists everywhere.

"Regarding Dr. Diner's reference to the volume of business done by the stores he referred to—it strikes me, if that is figured down to a question of pharmaceutical work, he will find Professor Rudd's figures are quite correct. If the stores are going to operate along present-day lines, there is no limit to the business that can be built up, but it is not of a pharmaceutical nature; pharmacy is what we want to defend and keep side-lines within reasonable bounds; we must, if we are going to win the position we fondly hope to occupy."

Henry M. Whelpley said there are about twenty states that have some form of prerequisite, but it requires considerable charity to bring them in line with what educators understand as prerequisite; hardly half that number have real prerequisite requirements, but he hoped that soon all states will have binding prerequisite laws. "In Missouri," he said, "it is not at all necessary to graduate from a college of pharmacy to become registered, in fact, it is the exception to do so; the majority register by the easier, cheaper, and shorter methods than through college qualifications. We have one institution in Missouri in which you can enroll for $100 and remain in the institution until you are a registered pharmacist—for the $100 they guarantee to see that you register, if it takes a life time; technically, it is a six weeks' course. Across the River, in Illinois,

they have prerequisite requirements, but they relate only to full registration. A registered assistant pharmacist need not have any preliminary education whatever, no qualifications. I suppose there are not many stores managed by assistant pharmacists in Illinois as the law would take care of them, but rumors are of quite different report.

"In Missouri we are having a multiplication of stores through proprietors opening one, two, three, four, and five additional stores, putting in assistant pharmacists; the proprietor manages to get around in all the stores once a day or so. While the Board of Pharmacy has prosecuted some of these, it does not keep up with the procession of new stores that are established.

"In regard to matriculants, we use every effort possible to select only those who promise from their records to develop into pharmacists worthy of the name. At times it is amusing to note the effort made by those not accepted to enter—it requires constant watchfulness to keep the unfit out."

William C. Anderson said that questions would arise in the minds of the public as to whether the object of reducing the number of stores was a selfish move and how the public will be benefited. He brought forward the argument that advanced and longer courses do not reduce the student-body. Continuing he said, "if we can in some way arrange through our faculties and our laws and colleges that there would be a class of men highly educated, qualified by a four-year course and, if desired, one or two years of college as a prerequisite to the pharmacy courses and only these men, when graduates can conduct pharmacies and will have certain rights in compounding prescriptions, etc., then the second class men of the colleges would have certain privileges or be employed under the former, but could not open pharmacies until the higher qualifications were met. Such a plan might solve some of our difficulties. It would take time to produce what we want under such a system, by elimination; the highly trained pharmacists, with the right to compound prescriptions and do clinical and analytical laboratory work, etc., would attract the public, and receive the support of the physicians; the old-time pharmacists, without being interfered with to-day would gradually drop out and be replaced by pharmacists of the type we hope for."

Wortley F. Rudd said he had no solution of the problems presented in his paper but he had in mind the organizations, which by close coöperation could bring this about—the boards of pharmacy, the colleges of pharmacy, the American Pharmaceutical Association, the National Association of Retail Druggists and the National Wholesale Druggists' Association. He was glad to hear the remarks of Mr. Hunsberger; he urged that all divisions of pharmacy study the subject with the purpose of correcting conditions.

Jacob Diner moved that this Section appoint a committee to again take up that matter of classification of pharmacies and drug stores—to outline the educational requirements for pharmacists, the scope, privileges, qualifications for druggists from the commercial side of pharmacy, its scope, limitations, etc., and submit a report to this section as soon as the committee is prepared to offer something of a constructive nature.

Motion seconded by H. M. Whelpley.

Robert P. Fischelis did not understand that Dr. Anderson recommended the classification of drug stores. His idea was, as he understood it, to have highly qualified men become proprietors of pharmacies and men with qualifications of lesser grade work under the former in the pharmacies. In his opinion such classification as proposed in the motion would be of no special use. Laws relating to pharmacy are in force and it would be a very difficult matter to decide who shall and who shall not be considered qualified to conduct a professional pharmacy and who shall run a commercial pharmacy, all of which have the same legal supervisions, and, presumably, the same professional qualifications are required of the pharmacists.

Henry J. Goeckel considered pharmacy was making progress; medicine had made progress slowly for a number of years and when the time came and conditions were shaped the advancement was more rapid. Hospital pharmacies should not be overlooked in providing higher demands of pharmacists in the retail pharmacies.

David S. Simms said he was not on a board of pharmacy nor connected with a school of pharmacy; his interest was solely that of a retail pharmacist. In his opinion the public should be apprised of conditions—the protection it is sought to give the people by the correcting of the conditions under discussion. The public must be served; the public foots the bills and provides the income of pharmacies and drug stores, and unless the people understand what is attempted and why, resoluting will not bring about results—the public must be shown the difference between

a pharmacy and a drug store, a drugless drug store and a junk shop. "As for me," he said, "I do not believe in side-lines; I have cut out the soda fountain; I believe in pharmacy and its practice and would like to know what the Associations are doing to bring messages like these under discussion to the people; without that little good will come of all this discussion."

The motion was called for and carried. The paper was received and Chairman Beard announced that the committee would be appointed later.

(The discussion of the paper by Wortley F. Rudd and W. W. White constituted the greater part of the transactions of the session, hence printed as part of the minutes. Other papers read will be named by title and printed hereafter with abstract of discussion thereon.—EDITOR.)

A paper by Frederick J. Wulling, "Mental Diagnoses of University Freshmen," was read by C. A. Dye. It was discussed and referred for publication.

"Making More Cordial the Relation Between Doctor and Druggist," by J. G. Beard, was read by the author, discussed, and referred for publication.

The first session of the Section on Education and Legislation was then adjourned.

SECOND SESSION.

The second session of the Section on Education and Legislation was called to order by Chairman J. G. Beard at 2:45 P.M., August 28.

On motion the reading of minutes was dispensed with.

Secretary William Mansfield read his report.*

Clyde L. Eddy suggested that it would be interesting to know how many students of states having no prerequisite attend Colleges of Pharmacy. He was of the opinion that colleges may be going ahead too fast for the Boards and that the Conference could perhaps advance general conditions; that is, work with the Boards to that end. The Secretary's report might bring out such points and others bearing on the related work of Colleges and Boards.

W. Bruce Philip said that while colleges may be in advance of the requirements of the Boards, they are still behind the desires of some of the students.

Secretary Mansfield stated that the desire of students for advanced work is shown by the number of matriculants among pharmacists who take up clinical laboratory work, enter pre-medical courses, etc. Of such students there is no record.

Motion was made by W. M. Chase and seconded by W. Bruce Philip that the report of the Secretary be received.—Carried.

Following the reading of a paper by Caswell A. Mayo on "Making Programs for the A. Ph. A. Branch Meetings," a motion was made to appoint a committee to secure information relative to programs of the branches and make suggestions to the branches for their programs. The motion was carried and Chairman Beard appointed Caswell A. Mayo, Clyde L. Eddy and C. C. Glover.

A paper by Edward H. Kraus on "A Combined Course in Pharmacy and Medicine" was read by C. C. Glover. A motion to receive the paper was seconded and, after discussion, referred for publication. The following papers by L. E. Sayre were read and referred for publication: "Pharmaceutical Education as a Factor in Promoting Success in a Vocation," and "Linking Medicine and Pharmacy."

Chairman Beard announced the members of the Committee on Classification of Drug Stores as follows: Jacob Diner, Chairman; W. F. Rudd and Ambrose Hunsberger.

Chairman Beard was pleased with the progressive enthusiasm of the members as evidenced by the discussions of the sessions of this Section which can be made of greater value. Many pharmacy schools do not hold membership in the Conference and can discuss their problems here and also be brought into closer relation and, perhaps, affiliation with the Conference. There are also legislative matters, educational subjects and many other topics which should be discussed within this Section; he hoped that the program for next year would compete in interest with the leading Section.

The report of the Committee on Nominations was read and the following nominations presented: *Chairman*, William Mansfield, New York; *Secretary*, John G. Beard, North Carolina; *Associates*, David S. Simms, Nebraska, and two to be appointed by the Chairman; *Delegate* to the House of Delegates, M. N. Ford.

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* To be printed later, Secretary Mansfield desires to include further data.

The nominees were elected. After installation of the officers a motion to adjourn was carried.

SECTION ON COMMERCIAL INTERESTS.

The first session of the Section on Commercial Interests was convened by Chairman Henry B. Smith at 9:45 A.M., August 27. The first order of business was the reading of the Chairman's address; it follows:

COLLEGE EDUCATION THE MAIN FACTOR IN SUCCESS.

By Henry B. Smith.

The guarding of your life and health, the guarding of your family's life and health is a vital question of your existence. Education is essential to obtain this protection. Pharmaceutical education is growing to be a dominent factor in insuring this protection. A student's mind must be properly trained so that he may become an observer and have initiative to do things. Independent thought and talent are a stimulus to original research. The medal man of his class may not prove to have been the best scholar. We all applaud a thorough-bred race horse, but the plug that pulls the plough makes it possible for us to obtain our food. The man who absorbs knowledge and retains it, ultimately does the best work. The Pharmacist is the Siamese twin of the Physician—they are interdependent. The Physicians' orders are prepared, checked and verified by the Pharmacist. Many errors are caught by the watchful dispenser and oftentimes a prescription is referred back to the prescriber. Occasionally, after an unsuccessful quest for the prescribing physician, the correct dose is dispensed by the pharmacist; it is, therefore, essential that the pharmacist should have the very best education obtainable to fit him for his calling.

Instructors and professors sort out and classify thousands upon thousands of ideas and facts, select the best and in well-chosen words transmit those pages of knowledge to a good proportion of willing brains.

Many students never acquire any knowledge after graduating from their *Alma Mater;* they are content that they have the right to practice their chosen profession; while others use their college education as a foundation only and are ever on the alert for advanced information, ideas and new discoveries, doing original research work, giving to posterity information upon which to build up the scientific structure.

Thousands of families are constantly making sacrifices to put their children through college. It is an old problem, but a new one each year to the family having members eligible for college education.

It is now obligatory in many states for the Licensed Pharmacist to be a graduate of a school of pharmacy. The drug store of to-day is as commercial as it is professional, and colleges of pharmacy should prepare their graduates for every condition they ultimately may have to face.

Statistics inform us that nearly 40 per cent. of those who started life as retail pharmacists later on took up other lines of livelihood and most of them successfully. Why? The answer is clear, it was the splendid foundation laid in youth that was instrumental in their ultimate success.

We occasionally find men who have acquired large fortunes. And when their success is analyzed they attribute it in large part to the employment of college-trained executives.

College men are more and more turning their attention to the many phases of commercial activities. Therefore the commercial side of pharmacy must have as much consideration in the curriculum of the pharmacy schools as the professional.

I wish to quote the following from one of our commercial writers—"The element of chance and speculation in business is yielding more and more to scientific organization and planning."

A higher education serves a valuable background to a successful commercial career. Select an institution of known integrity. Disregard remuneration, supply courage, with application and enthusiasm; success is bound to follow. Education, personality and perseverance are the good luck signs of success. Consequently, while college education is not the entire means of success, it is largely contributary.

C. C. Glover said in part—"I believe that all schools of pharmacy appreciate the fact that the element of business is continually becoming more important in pharmacy, and to that end we must prepare our students to compete with others who have had long training in commercial interests, business preparation, four-year college courses in business administration, and the like. To that end, eur college, the University of Michigan, has recently added a year of elementary

economics to the three-year course in pharmacy. That is in addition to the usual courses in commercial pharmacy which have for many years been taught in pharmacy."

In answer to a question by Chairman Smith, Mr. Glover replied that the subject was obligatory.

Alfred Burnham said that in Massachusetts College of Pharmacy commercial pharmacy is being taught and also business administration. The students have an opportunity for arranging window displays; they are instructed in buying and selling, and their deficiencies are pointed out to them and reasons therefore; card writing is part of the instruction of the first year. The second-year subjects include accounting and law. Abstract problems, such as store location to the details of store management are parts of the senior course.

Chairman Smith asked whether persons not connected with the college were invited to address the students on subjects they were qualified to discuss. The speaker replied that this was part of the course and added interest and value to it.

(For reference, the questionnaire sent to retail pharmacists is reprinted and the questions will be thereafter referred to by number.—EDITOR.)

1. Should more attention be given to the teaching of commercial subjects in colleges of pharmacy? If so, why? If not, why not?
2. Is pharmacy, *as it is practiced* in your community, principally professional or commercial? Is there a trend away from, or toward, more professional practices?
3. Do you believe that a retail pharmacist is ever justified in recommending a remedy for a simple ailment? If not, why not? If so, in what instances?
4. Do you think a pharmacist should give first aid without compensation? Why, or why not?
5. Which do you consider the best and most effective sales stimulator, cut prices or service? Explain.
6. What, in your opinion, constitutes ideal service in the retail drug store?
7. What type of *recent graduate* do you find makes the best clerk, the one with long, practical drug-store experience and little technical knowledge or the one who has had much technical training and little practical experience?
8. Are you in favor of discontinuing the practical experience requirement in our state pharmacy laws? If so, why? If not, why not?
9. Are you supplying physicians in your neighborhood with all the biological products used in their office practice? If not, are you equipped to do so? Who is supplying them if you are not?
10. Do you believe that drug stores should be classified? If so, how?

Replies that had been mailed to the Section were read by Secretary Philip:

Dale G. Kilburn replied in the affirmative to the first question because it was necessary for producing a profit; he considered professional pharmacy as a permit for the other.

Paul Caldwell replied in the negative as follows: "No. It has been the intensive commercial training in pharmacy that has robbed it of the respect which it had attained through the unselfish efforts of that group, not so far back in the distant past. Commercial training confines itself to the demonstration of how to make a dollar without any regard to the color, taste or odor of that dollar. Any profession suffers in this atmosphere."

Secretary Philip, in commenting, said that the replies expressed the reasons why commercial pharmacy should be taught in colleges of pharmacy, so that the training may follow proper lines. In his opinion a "righteous" dollar could through such practice be earned—of a "delightful taste" and "exquisite perfume."

Joseph Jacobs replied by sending in the following comment:

TEACHING COMMERCIAL SUBJECTS IN COLLEGES OF PHARMACY.

A demand for men skilled to rule and guide the forces that move business in all its varying phases grows more and more persistent. Our Universities are recognizing this demand. In consequence they are maintaining departments in Merchandizing, Banking, Exporting and Importing, Efficiency Engineering, Commercial Law, Manufacturing and kindred subjects.

Besides the mental training these courses afford, the student finds here practical application of the principles of mathematics, the elements of geography, language studies, and applies

his chemistry, mechanics and physics. The teachings of these college courses cannot fail to broaden the scope and intensify the activities of the student, who, mastering them, enters on the practice of pharmacy as a profession and vocation. Earnest and intelligent attention to such topics, well taught, should become the pharmacist's best weapon, in the hands of intelligent and earnest men, in the "world's broad field of battle," and a source of comfort "in the bivouac of life."

As the student absorbs and acquires technical knowledge in the sciences taught, and learns the various sources and characteristics of medicines, their production, preparation and proper dispensing; as he witnesses the unfolding of the agencies of chemistry, mechanics and physics that appply to our science; it must broaden and widen his views and increase his skill to see further how this knowledge is to be used in all its practical applications. Commercial practices have a direct relation to all these branches of college teaching. More attention could well be given to them without impeding progress in the matters of scientific pharmacy. Science—the matrix of knowledge, wisdom and efficiency, hand-maidens—should advance with equal pace; then the comment of our ploughman poet would not so often apply:

"Poor human bodies are oft sic fools,
For all their colleges and schools."

J. H. Webster said that in his immediate section professional pharmacy was progressing; however, the reports differed. He commended propaganda by pharmacists of N. F. and U. S. P. preparations among physicians. Such endeavor is to be encouraged, for excessive preponderance of the commercial was developing criticism; people were beginning to question the right of pharmacists to special privileges.

Chairman Smith spoke of propaganda referred to by Mr. Webster in his section—the work is in charge of a committee and quite a number of Brooklyn pharmacists now have a full line of N. F. preparations, and they supply pharmacists with them who have more limited demand. One or more preparations are detailed at intervals.

The replies sent in indicated commercial trend.

J. H. Webster asked whether the testing of water and the like properly belonged to pharmacy.

Ambrose Hunsberger thought it was a branch of pharmaceutical work which should be encouraged. The pharmacy schools prepare their students for such activities and they can continue their studies. Medical men have not been modest in advancing such ideas and have strengthened themselves with the public by their interest in these subjects, which are as closely related to pharmacy. Pharmacists have lost opportunities, but others are still open to them that will gain for them a better recognition of the public.

He said that Philadelphia pharmacists were realizing the professional side more and more and that chain stores and department stores are stronger competitors in articles of merchandise than in items requiring pharmaceutical training; trade on merchandise can be diverted, whereas a professional reputation holds fast. The interest in discussion of pharmaceutical problems is growing, so that at local meetings the business matters are hurried through in order to discuss pharmaceutical subjects and propaganda.

Frank A. Jacobs, Secretary of the Canadian Pharmaceutical Association, extended greetings of the latter organization and extended a general invitation to A. Ph. A. members to attend pharmaceutical conventions in Canada. Conditions there, he said, evidently were very much like those in the States.

The answers received to the third question were affirmative, but the service should be rendered with due consideration of the pharmacist's responsibilities.

J. H. Webster referred to the address of Dr. Charters in which he spoke of what a pharmacist needs to know. The investigations indicated that some pharmacists were not as well posted on first-aid subjects as boy scouts—such as recognition of minor injuries, some of the eruptive diseases, etc. In a reply to a suggestion by him to Dr. Charters, that this might be a rather dangerous doctrine, the latter replied that public welfare was of paramount importance—pharmacies had become recognized as necessary first-aid stations and pharmacists should be educated and prepared to meet these requirements.

D. B. R. Johnson pointed out the danger of delay in consulting a physician. He stated that in the school of which he was dean first-aid subjects were part of the course.

Ambrose Hunsberger said that physicians sometimes err in diagnosing eruptive diseases; as many here know, cases first diagnosed as small-pox have turned out otherwise, and reversely. There were many questions involved which the pharmacist would have to decide with judgment and precaution, and this was not a matter to receive endorsement by this Section, at this time.

Theodore Wetterstroem emphasized the points of the preceding speaker and referred to some cases which resulted in damage suits; others of no greater significance brought praise from the individuals and community. He referred to an arsenical poisoning of a number in one family; all except one member were given the arsenical antidote by him and recovered. The mother did not seem to suffer as acutely as the others, having eaten less of the cake, consulted a physician who advised to "let nature take its course," and she died. He, Mr. Wetterstroem, received the praise of the family and community—it might have resulted otherwise; there is always an element of danger.

Joseph Jacobs sent in his comments on the two questions—"Should Retail Druggists Prescribe for Simple Ailments," and "Should Pharmacists Give First Aid without Compensation?" They follow:

"The science of medicine is more and more applying the principle of combatting and removing the causes of disease. Attempts are made, less often, merely to relieve the suffering, shown in symptoms. As these causes often lie deeply hidden in the mysterious domains of physiology, it is dangerous for a druggist to experiment with the alleviation of symptoms; unskilled treatment might make matters worse, or even cause fatal results, as remote consequences.

"We may well see how the druggist might degenerate into a veritable Dr. Hornbook, if he should, out of unwise sympathy or from motives of gain, undertake promiscuous prescribing to his customers. I commend to my brother druggists a careful perusal of Burns' famous satire: Death and Dr. Hornbook. Be it remembered that Death is made to say:

Where I killed ane a fair strae death,
By loss o' blood or want o' breath,
This night I'm free to tak my aith
That Hornbook's skill
Has clad a score i' their last claith,
By drap and pill.

"There are many simple, hygienic remedies, however, that the druggist may suggest in cases where the customer's ignorance or want of thoughtfulness indicate such suggestion, and the symptoms displayed are clearly due to insanitary habit or causes. Other similar cases will readily suggest themselves. 'Certainty First' could never prove to be a bad motto.

"It should be a gratification to the pharmacist whenever able to render 'first aid' in cases fallen to his share, irrespective of the personal wealth of the sufferer. If, on inquiry, afterwards, the patient thus aided, is found to be able to pay the cost of such aid, justice to his business requires the pharmacist to present his account, and collect the charges. Humanity, it seems to me, would dictate that no charge for personal service should ever be included in such cases, but only the fair worth of any materials furnished.

"Again my favorite poet:

A brother to relieve,
How exquisite the bliss."

F. W. E. Stedem stated that years ago he was located in a manufacturing section of the city and frequent non-hospital cases came to the store, such as removing particles of iron, splinters etc. He did not make a charge, but the families patronized the store when there was opportunity, evidently appreciative of the service.

A. H. King gave experiences somewhat related to those of other speakers; he made no charge for such service, but felt repaid and probably derived patronage thereby.

Chairman Smith introduced the next subject by saying that "service was productive of results; those who look for cut prices are in the minority and would not exist if it were not for the pharmacists who have not the courage to ask fair prices."

Turner F. Currens spoke along the lines of the preceding speaker; he said that customers who endeavor to buy at cut prices are not always accurate in their references to former purchases or prices they obtain at other stores.

A. C. Taylor brought points of preceding questions into his remarks. He had tried the ownership of three stores and cut prices and was unsuccessful. He then opened a store, with a purpose to give service and make use of his reputation with physicians which had been established; the business was largely in prescriptions and related work. When the war came on the Government occupied a building, back of the store, where several hundred girls were employed. There were no eating places in the neighborhood and he saw an opportunity for serving sandwiches and lunches. He ventured but was fearful of the loss of his prescription trade. Physicians who came to the store made no objection. Some of those served left prescriptions. During the influenza he sent out food. When these employees were no longer needed, this part of the business was discontinued, but many of the patrons of the days of the lunch counter still were customers of the store. In his opinion service was the thing.

William C. Anderson brought out some points of service as a patron; he said the conditions of the neighborhood have a bearing on what the store will be and, no matter what the conditions, service will win trade. He referred to the purchase of tincture of iodine—one, supplied in a cork-stoppered bottle and at another store in a proper bottle for such a preparation; in one store he had purchased ice cream—the carton was wrapped, but the warmth of the hands melted the cream; at another store the carton of ice cream was placed in a paper bag large enough to keep the warmth of the hands from the carton.

Thomas Stoddart said it was the service of the employees that built up a business and held the patronage; having the goods is another essential of business success.

Secretary Philip emphasized the need of saleswomen in the average pharmacy. Mr. Stoddart remarked that he had one store which catered largely to women's patronage and in all of his stores women were employed. Mr. Taylor expressed similar views. Mr. Webster said that the kind of service desired varies—some patrons wish to buy and leave, some want the convenience of a charge account; some like to be shown goods, others become impatient, etc.

The remainder of the morning session was taken up with a discussion of the seventh question, participated in by Messrs. Smith, Stoddart, Anderson, D. B. R. Johnson, Philip, Diner, Webster, Taylor, and others. The points of argument were for and against experience prior to entering colleges of pharmacy—the kind of experience gained by the apprentice in the stores, the practical experience given in colleges; legislation from various viewpoints—the college entrance requirements, the regulations of stores, etc. The consensus of opinions centered on the necessity of coöperation of the several divisions—the colleges should keep in touch with the requirements of pharmacies, and pharmacists should advise with the faculties; the apprentices should be young men who had given some thought to continuing in the work and not merely to be employed.

Chairman Smith appointed the following on the Committee on Nominations: William C. Anderson, J. H. Webster, Thomas Stoddart.

SECOND SESSION.

The second session of the Section on Commercial Interests was called to order by Chairman Henry B. Smith at 10:00 A.M., August 29.

The Chairman called for the reading of the following. It was read by Secretary W. Bruce Philip:

SHALL WE WAIT?

By Samuel S. Dworkin.*

I am not a pessimist but I have recently conducted a survey of conditions in the retail drug field in New York State and conditions as I find them are, to say the least, discouraging. What I have to say has its foundation in fact and if the note I strike is not a happy one, it is because the facts do not seem to warrant my being very optimistic. Pages could be written on the problems involved but I realize that time is limited and I shall be brief, trusting that the discussion will serve to direct attention to the importance of the matter in hand.

What is Pharmacy? Is it a profession, a business, an enterprise or a trade? It seems to me that as it stands to-day it is a combination of a profession, a business and a trade.

Only a comparative few stores stand out as professional pharmacies, fighting against the strong tide of commercialism—standing as a final defense of the profession against the tide that

* Chairman, Committee on Commercial Interests, N. Y. State Pharmaceutical Association.

threatens to engulf us all. In many stores, as you all know, the prescription department has been removed to an unimportant corner, with a modest sign indicating that physicians' prescriptions still are compounded in the miniature department store which has supplanted the old-time drug store and which actually, if not professedly, now has as one of its many side-lines, drugs, chemicals and professional service. What was at one time, and still should be, the most profitable department of the store, has become the least profitable one. The art of dispensing threatens, in many retail drug stores, to become a lost art. Apprentices who formerly obtained their pharmaceutical training behind the prescription department, now obtain it at the soda fountain, dispensing the latest creations in sandwiches and salads.

This new pharmaceutical "jazz" is producing a condition in the retail drug field which cannot fail to reflect discredit upon our profession. With the tremendous increase in the sales of advertised remedies there has been a diminishing number of sales of prescription medicines until at the present time there are localities in which from seventy-five to ninety-five per cent. of all of the prescriptions compounded call for proprietary products of one kind or another. With the continued simplification in prescribing and the increased use of serums and biological products, the compounding of prescriptions has become increasingly a matter of handling ready-made products rather than the manufacturing of items, the making of which demands pharmaceutical skill.

The physicians are getting their supplies direct from manufacturers or from supply houses controlled by non-pharmacists. I am convinced that the pharmacists generally are overlooking very important future business. I believe that by excluding this part of the biological trade they are forcing physicians to depend upon supply houses and other non-pharmacist dealers. I am of the opinion that biological products will more and more replace certain old-time remedies and that pharmacists who do not make the proper effort to hold this trade will soon find that their prescription business has dwindled away with nothing to take its place. Present-day drug stores will find themselves drugless. Efforts will be made to separate drug stores and pharmacies into two classes and the store that does not keep up with the present apparent trend in medication may find itself in the non-pharmaceutical class.

My survey of New York State revealed the fact that a majority of the pharmacists were not carrying biological products at all and that survey showed that less than ten per cent. of the retailers have proper refrigerators for carrying such stock.

I found, among the answers to the questionnaire that I distributed among the pharmacists in New York State, the following prediction for the future: "The pharmacy," a retail pharmacist wrote me, "will be merely a prophylactic station, as less and less medicine will be used by the public and less and less administered by the physician." Shall we wait unprepared?

It is the duty of this Association to start an aggressive campaign to remedy such conditions and the Committee on Closer Affiliation Between Pharmacists and Physicians should be instructed to start a campaign immediately to encourage prescriptions of more U. S. P. and N. F. preparations and to inaugurate a national movement to stop the distribution of biological products, serums, vaccines and other strictly pharmaceutical preparations by non-pharmacists.

A special committee should be appointed to take charge of biological and serum propaganda. The committee should prepare literature for publication in all the pharmaceutical publications.* Also it should arrange lectures in various local associations and colleges on this subject, teaching, instructing, advising and discussing various phases of this subject. There should also be a subcommittee, members of which should be heads of biological departments of the most prominent and reliable manufacturers, the function of which should be literary and advisory.

This work should begin at once. It is our natural inclination to wait until the deluge practically overwhelms us before we make an effort to save ourselves. This flood we can see approaching and in justice to ourselves and to the pharmacists who will come after us, we should take the steps necessary to avert the threatened catastrophe.

William C. Anderson moved that the paper be received and the recommendation therein referred to the House of Delegates with a favorable recommendation of this Section.

Thomas Stoddart asked whether it was generally known that some of these biologicals were furnished free to physicians. Chairman Smith said that was the case and many cities supplied these serums and vaccines free.

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* See *The Pharmaceutical Era*, October 25, 1924, article by M. Colloton. On a related matter see p. 557, Volume 50, PROCEEDINGS, A. PH. A.

L. L. Walton said that some of these products were distributed free by the state; it means a tax, and a protest of some kind would seem timely and helpful.

The motion was seconded.

Redmond Mayo said he had some experience with a physician who had been procuring biologicals from him, but now from the Health Department. When asked why he had changed, he said, "there was such a variation in prices" and also admitted that "the Health Department was very liberal in giving out these products."

Chairman Smith and L. L. Walton referred to the expiration dates of these products. The former also mentioned the fact that manufacturers carried the stock in the larger business centers.

The motion was carried.

The following papers were read, discussed and referred for publication:

"Retail Selling" by Turner F. Currens.

"Service Helps Success" by E. H. Breckon.

"The Drug Store Window and Its Potentialities As an Advertising Medium" by F. H. Peck.

The Chairman called for the report of the Secretary; it follows:

REPORT OF THE SECRETARY OF THE SECTION ON COMMERCIAL INTERESTS.

By W. Bruce Philip.

All the success of this section in the way of program is due to the efforts of President Henry B. Smith. (Personally, I do not favor papers read by title or valuable time taken to present papers by absent authors. Those that give their time and money to attend these meetings are entitled to every hour of the sessions; at best, this time is too short.) The West is four days' travel from Buffalo; eight days going and coming. All the Western men in attendance at this Convention, with the exception of myself, are strictly college men. They are contributing to the scientific and conference work of this Convention, hence the absence of papers by them before the Section on Commercial Interests, though an earnest effort was made to have some of our successful commercial men come to Buffalo and meet with this Section.

There is no question in my mind of the value of this Section on Commercial Interests. There is, however, in my opinion, a doubt as to whether we are following the best method of developing this Section so that it will be of the greatest value to pharmacy, including our Association. In offering the following my ideas may appear radical, but they are the result of study over a long period of organization work spent in solving practical commercial problems. I hope in offering these suggestions I do not intrude on the privilege of our worthy chairman. I believe the Section on Commercial Interests should be the means of drawing the pharmacists of the different local centers where the conventions are held into the American Pharmaceutical Association. To do this we must have their coöperation and their help. I think it is a mistake to have the Secretary of this Section living at a great distance from the President. Correspondence by mail is not satisfactory. If the President of this Section was from the Convention City the Secretary of this Section could be selected from the same place, assuring team work and greater cooperation. Every large city has its commercial problems. With the President and Secretary from the Convention City these local problems in commercial pharmacy would be brought before this Section and fully discussed, giving opinions relative to a solution of them from pharmacists all over the United States. Credit for problems thus solved by this Section of the American Pharmaceutical Association would be valuable. It would prove the worth of our Association and increase our membership among retail pharmacists. A canvass of the Buffalo druggists just a few weeks ago by a friend of mine revealed the fact that quite a few of them did not know that there was to be an American Pharmaceutical Association meeting here; others had no idea of the date of this meeting and still others did not understand that they could or should attend. Would the plan I suggest remedy this? Yes, if the efforts now used by the officers of this Section and communicated to the hundreds that cannot attend were concentrated to the hundreds of members and non-members within car-fare distance of the Convention Hall; it is true that meetings may be held in other than big cities, but there are always in the neighborhood of meeting places druggists that have their problems; the solution of these is an essential part of commercial pharmacy.

To accomplish this the election of officers of this Section could be passed with the request that these officers be selected by the Council after the selection of the next Convention City.

It was moved to accept the report of the Secretary and that his suggestion relative to the officers of the Section be referred back to the incoming officers with the suggestion that the Associates of this year be named from the Convention City, and if this plan proved satisfactory it might be desirable to accept Secretary Philip's suggestion next year. Carried.

The following officers were elected: *Chairman*, W. Bruce Philip, California; *Secretary*, George Judisch, Iowa; *Delegate* to the House of Delegates, Henry B. Smith, New York. After the installation of officers the Section on Commercial Interests was adjourned.

ASSOCIATION BUSINESS

AD INTERIM BUSINESS OF THE COUNCIL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION 1924–1925.

Office of the Secretary, 192 Roseville Ave., Newark, N. J.

LETTER NO. 2.

November 4, 1924.

To the Members of the Council:

7. Minutes of Board of Directors and Council Meetings Approved: Motion No. 1 (see item 1, Letter No. 1, page 1) has been carried.

8. Prof. Scoville withdraws as candidate for President of the A. Ph. A.: Motion No. 2 (see item 2 page 30, Letter No. 1) has been carried. In connection with the votes on this motion by members of the Council the following comment has been received: Dr. Arny writes:

"Obviously I stand ready to vote in favor of the motion since I fully understand Scoville's desires. However, are we not establishing dangerous precedents in authorizing notices of withdrawal upon the official ballot? I use the plural since it is my recollection that a similar request made several years ago was granted. If one of our candidates for President may thus officially withdraw after our annual meeting, why should not two, giving the third 'a walk over?' Or, why should not three, causing no election? I can imagine that at some time a very serious situation might result through political manipulation. My own thought is that any candidate desiring to withdraw should announce the fact in the pharmaceutical journals as Drs. Kraemer and Lyman did in years gone by. Or, far better, should notify the chairman of the Nominating Committee before his report reaches the sitting of the association where it is to be presented. This I did myself in 1920, when I felt I could not accept the nomination as President."

So that there may be no misunderstanding of Dr. Scoville's position in the matter, his letter of September 11 to the Secretary is printed in full herewith:

"At the Buffalo meeting of the A. Ph. A., I was named as one of the candidates for office of President of the Association, to be balloted upon, this fall. When I learned of my nomination, I told two of the nominating committee that I would be unable to serve as President, if elected, but they both urged me not to withdraw my name at that time.

"If I were sure of being defeated in the election, I would be willing to let my name stand on the ballots, but I cannot take any chances on the election. In writing to Professor Day, I have been informed that, in his opinion, the Council has power to remove my name from the ballots and to nominate another candidate, if it so desires. I therefore request that the Council will permit me to withdraw my name from the ballot.

"My reasons are stated briefly in the accompanying letter which I have prepared, intending it for publication. I have, however, been advised against that publicity. I will be glad to escape any unnecessary publicity in the matter.

"If, however, the Council does not see fit to withdraw my name from the ballot, then I ask that I may be permitted to have copies of this letter enclosed with each ballot sent out by the Secretary.

Yours sincerely,

WILBUR L. SCOVILLE."

Dr. E. F. Kelly voted in the affirmative "with regret."

E. G. Eberle did not vote on the motion and comments as follows: "Professor Scoville's wishes should be complied with—probably the

best way would be his second suggestion. I am pleased with references to Professor Scoville's services."

In behalf of all members of the Council voting affirmatively on this motion it is said that they have only followed Professor Scoville's wishes and not their own inclinations.

9. Publicity for Chairman Ruth's address: Editor Eberle writes as follows under date of October 21:

> "Last night I was preparing the minutes of the Section on Practical Pharmacy & Dispensing for the JOURNAL, and I find that the action on Chairman Ruth's address was as follows:
>
> "That a sufficient number of reprints of the address be made so that copies may be sent to officers of each state association, to all pharmacy schools, and to all drug journals, with the request that publicity and coöperation be accorded. It was further directed that this be referred to the Board of Directors as to the financial outlay."

Dr. Newcomb informs us that he will send out some publicity matter to a mailing list of 6000 this month and that he can include reprints of this address if desired.

It seems to your Secretary that if the wishes of the Section on Dispensing are carried out there will be ample publicity for this article without going to the expense of printing 6000 reprints and he desires to move a substitute for Motion No. 3 (see item 3, page 31, Letter No. 1).

(*Motion No. 6.*) *It is moved by Fischelis that a sufficient appropriation be made to comply with the recommendation of the Section on Practical Pharmacy and Dispensing for distributing reprints of Chairman Ruth's address.*

10. Certificate for Ebert Prize: Dr. Arny writes as follows:

As the recommendation made in 1924 Presidential Address concerning the Ebert Prize was referred to the Council and by it to the Committee on Property and Funds and as Dr. Pittenger's proposition (see item 4, page 31, Letter No. 1) handles the same matter in a manner different from that found in the Presidential Address:

(*Motion No. 7.*) *I move that Dr. Pittenger's communication be referred to the Committee on Property and Funds for consideration along with the recommendations made in the Presidential Address of 1924.*

Professor Day writes: Vice-President Pittenger's proposition regarding Ebert Prize Certificate has my cordial support.

11. Election of Members: Motion No. 4 (see item 5, page 33, Letter No. 1) and Motion No. 5 (see item 6, page 34, Letter No. 1) have both been carried. Applicants for membership numbered 2 to 23 inclusive and H-1 to H-73 inclusive are therefore declared elected.

12. Appropriation for Headquarters Campaign: Chairman LaWall of the Committee on Finance advises that his Committee has approved a request for an additional appropriation of $5000 for the headquarters building campaign subject to authorization by the Council. He also writes that—"In the future the available interest from the deposits of the Headquarters Funds in several Baltimore banks, amounting to about $2800 per annum, will be turned into the Headquarters account as soon as possible, and applied against this appropriation."

(*Motion No. 8.*) *It is moved by LaWall that an additional appropriation of $5000 be authorized for the work of the headquarters campaign committee.*

13. Formation of Executive Committee of Council: The following communication has been received from Chairman Beal:

To the Members of the Council:

> In the haste of the proceedings at Buffalo we lost sight of the necessity of providing for an Executive Committee of the Council, to act for the whole body in the interim between meetings, upon matters which cannot be adequately considered and settled by mail discussion and vote. While the By-Laws do not specifically authorize the Council to appoint special committees, I assume that under the general principles of parliamentary law we have such authority, and I therefore recommend the following:
>
> (1) That an Executive Committee be created, to have the status of a special committee, until the next annual meeting of the Association.
>
> (2) That said Special Executive Committee shall consist of the Chairman of the Council, President of the Association, Secretary of the Council, General Secretary, Treasurer, and five other members nominated by the Chair and confirmed by vote of the Council.
>
> (3) That said Executive Committee shall be authorized to act for the Council in cases of emergency and upon questions that cannot properly be considered and disposed of by mail, all such acts, however, to be subject to approval or disapproval by the Council.

(4) That the Chairman be authorized to call a meeting of such Executive Committee at Washington, either immediately preceding or following the meeting of the National Drug Trade Conference; the traveling expenses of said Executive Committee to be paid by the Association in all cases where these expenses are not paid by other bodies.

Please send your vote or opinion upon the above recommendation to Secretary Fischelis at the earliest possible date, so that if the creation of the committee is authorized it may be appointed and confirmed in time for the members to attend the special meeting provided for.

Very truly yours,

J. H. BEAL,
Chairman of the Council.

In this connection it is pointed out by Secretary Day that it might be better to hold the mid-year meeting of the Executive Committee of the Council the latter part of February than in December as this more nearly approximates the half-way point between our annual meetings. With this suggestion the Secretary of the Council is in thorough accord as there will be a greater accumulation of business at that time than there will be early in December.

(*Motion No. 9.*) *It is moved by Fischelis that Chairman Beal's recommendations regarding appointment of an Executive Committee of the Council be approved and that the time of calling the mid-year meeting of this Committee be left to the judgment of the Chairman of the Council.*

14. Meeting of Councilors at Washington in connection with N. A. R. D. Convention.

A meeting of the A. Ph. A. Councilors who attended the N. A. R. D. meeting at Washington was held on September 22 and the minutes of this meeting are presented herewith.

Minutes of Special Session of Councilors called by the Chairman at the Washington Hotel, Washington, D. C., Monday, September 22d at 4:30 P.M.

Present: Chairman Beal, President Holton, Treasurer Kelly, Secretary Day, Chairman Philip, of the House of Delegates, Councilor DuMez and Councilor Hilton.

Secretary Day acted as Secretary of the Council pro tem.

Secretary Day read a letter addressed to the Secretary of the N. A. R. D. and a letter addressed to the Secretary of the N. W. D. A., to accompany a statement by Chairman Dunning concerning the Headquarters Building Campaign to be transmitted to the Associations above named. The letters and statement were approved.

Coöperation with the N. A. R. D. Executive Committee in opposition to the Cramton bill was discussed and President Holton and Chairman Beal were authorized to coöperate with the Executive Committee of the N. A. R. D. in expressing the opposition of the Council to the Cramton bill or any similar bill which aims to take away the power of immediate and effective appeal from the drug trade.

The meeting then adjourned.

W. B. DAY, *Acting Secretary.*

(*Motion No. 10.*) *It is moved by Fischelis that the action taken by the Councilors at Washington as reported in the foregoing minutes be approved by the Council.*

The following communication has been received from Secretary Day:

"I have the following reply from Secretary Waterbury of the National Wholesale Druggists' Association in regard to the invitation extended by our House of Delegates inviting the coöperation of the N. W. D. A. in the campaign for the erection and equipment of a permanent headquarters building for the A. Ph. A. and to serve all phases of pharmaceutical interests.

"I think it would be well to present this letter to the Council in your next Council Letter so they may be informed of the results of our letter to the N. W. D. A.

"The resolution adopted by the National Wholesale Druggists' Association reads as follows:

REGARDING SUBSCRIPTIONS TO ALLIED ASSOCIATIONS.

"The Board of Control finds that they have no authority to urge or instruct our members to make any subscription such as to the headquarters building fund of the American Pharmaceutical Association. The Board, however, extends to that Association our sincere and hearty best wishes for success in its undertaking."

"I might add that this is but the reiteration of a policy long established and followed with respect to all contributions and subscriptions no matter how meritorious they may be. It is the position of the Association and I rather suspect it will always be maintained, that donations and subscriptions are a matter of individual judgment and that it is not for

the Association to make the choice for individual members as to types or character of institutions they shall support in a financial way.

Very truly yours,
C. H. WATERBURY, *Secretary.*"

15. Professor Beard withdraws from Board of Canvassers: At the request of Professor Beard, who is a candidate for second Vice-President of the A. Ph. A., President Holton has relieved him from service on the Board of Canvassers and has nominated Frederick O. Bowman of Chapel Hill, N. C. in his place. The approval of the nomination by the Council is asked and also the approval of the appointment of Dean E. V. Howell to act as chairman of the Board of Canvassers in Professor Beard's place. Please note your approval or disapproval of these changes on the enclosed card.

16. Report of Expenditures for Headquarters Campaign: The following letter and statement have been received from Chairman H. A. B. Dunning of the Headquarters Campaign Committee:

"In accordance with the request of the Council of the American Pharmaceutical Association, I am sending you herewith a detailed statement of the expenditures on account of the American Pharmaceutical Association Building Fund Campaign, in sufficient detail, I believe, to furnish the information required by the Council.

"Expressing my pleasure in offering this statement, I am, with kindest regards,

Sincerely yours,
H. A. B. DUNNING."

The total expenditures as indicated on the statement by Dr. Dunning were as follows: Clerical and stenographic help $1,186.00; stationery and printing, $3,868.44; postage, $1,644.84; telephone and telegraph, $251.77; mailing service, $232.93, and traveling expenses, $772.63.

17. Vacancy on Research Committee: Dr. H. V. Arny, Chairman of the Committee on Research, calls attention to the fact that there is a vacancy on this Committee, due to the death of Professor Kraemer. According to the By-Laws, members of this Committee are elected by the Council and nominations are therefore in order to fill the unexpired term of Professor Kraemer on this Committee.

18. Applicants for membership: The following applications accompanied by first year's dues and proper endorsements have been received. You are requested to vote on these applications.

No. 24, Carl W. Hales, Chapel Hill, N. C.; No. 25, Thomas J. Moore, Chapel Hill, N. C.; No. 26, Harold Porter Moore, Chapel Hill, N. C.; No. 27, Frank Percy Hobbs, Chapel Hill, N. C.; No. 28, Wm. Russell Griffin, Chapel Hill, N. C.; No. 29, Claude E. Gillikin, Chapel Hill, N. C.; No. 30, Wm. Ronald Keen, Chapel Hill, N. C.; No. 31, Kenneth V. Franklin, Chapel Hill, N. C.; No. 32, J. Carl Kelly, Chapel Hill, N. C.; No. 33, Ira Alonzo Mullen, 1002 W. 8th St., Erie, Pa.; No. 34, Daniel Pelaez, Calle Colombia, Medellin, Colombia, So. America; No. 35, Arthur Theodore Desboeufs, Archbold, Ohio; No. 36, Joy H. Johnson, Box 1749, Salt Lake City, Utah; No. 37, Arthur Lewis, 63 West 83rd St., New York City; No. 38, Henry Harris, 408—E. 9th St., Little Rock, Ark.; No. 39, Dr. Bruno Leo Monias, 551 Grant Pl., Chicago, Ill.; No. 40, Clarence Dufferin Rogers, 109 Baynes Cor. Auburn Ave., Buffalo, N. Y.; No. 41, Earl F. Callan, 350 W. 31st St., New York City; No. 42, John Frederick Hahn, 274 Canal St., New York City; No. 43, Henry Alvin Cole, 5121 S. Michigan Ave., Chicago, Ill.; No. 44, Edwin Bird, 1302 Spring Garden St., Phila., Pa.; No. 45, Barzillai L. Cole, 3727 Laclede Ave., St. Louis, Mo.; No. 46, Herman Edw. Frees, 1255 Wellington Ave., Chicago, Ill.; No. 47, John Francis Oneto, 2516—26th Ave., Oakland, Calif.; No. 48, Geo E. Milliman, 130 So. 6th Ave., Mt. Vernon, N. Y.; No. 49, Luther Buehler, c/o Lee-Strauss Co., Johnstown, Pa.; No. 50, Jesse Oliver Yaryan, Paris Drug Co., Paris, Idaho; No. 51 Wm. Chas. Goss, Jr., 407 Valley St., So. Orange, N. J.; No. 52, Minnie Behm Kraemer, 267 No. Avenue, Mt. Clemens, Mich.; No. 53, Wm. R. Nicholson, Cor. Central & B'Way, Marshfield, Oregon; No. 54, Ralph Eugene Hall, Chapel Hill, N. C.; No. 55, Herbert W. Smith, Chapel Hill, N. C.; No. 56, Jos. G. Davis, Chapel Hill, N. C.; No. 57, Geo. Fr. Murr, Chapel Hill, N. C.; No. 58, Ilia Maria Ortiz, c/o Munoz Rivera Co., Rio Piedras, Porto Rico; No. 59, Herman A. Voigt, 117 W. Saratoga St., Baltimore, Md.

(*Motion No. 11.*) *Vote on applications for active membership in the American Pharmaceutical Association.*

19. Applicants for membership who have contributed to Building Fund: The following non-members of the A. Ph. A. have pledged a total of $25. or more to the building fund and have made a cash payment of $5. or more. They

are therefore entitled to membership in the A. Ph. A. You are requested to vote on these applications.

H-74, T. N. Kenyon, 2608 Nicollet Ave., Minneapolis, Minn.; H-75, Charles Gale Shell, c/o The Bullard & Shedd Co., Keene, N. H.; H-76, Albert McClelland Foster, 7835 Troga St., Pittsburgh, Pa.; H-77, Fred L. Vilas, Pierre, S. Dak.; H-78, Geo. Kron Peecook, Cor. Market & McKean, Kittanning, Pa.; H-79, Edgar D. Taylor, 9–17 So. 13th St., Richmond, Va.; H-80, Frank L. H. Nason, 368 Congress, Boston, Mass.; H-81, Thomas W. Lawrence, 6742 Reynolds St., Pittsburgh, Pa.; H-82, Fred John Sackett, 1620—3rd Ave., So. Minneapolis, Minn.; H-83, James A. Bauman, 164 W. Ridgewood Ave., Ridgewood, N. J.; H-84, J. H. Foley, DeSoto, Kans.; H-85, Edw. C. True, 17 Drummond, Auburn, Maine; H-86, Philip Bruno, 47 Main St., Tuckahoe, N. Y.; H-87, Robert A. North, 190 Concord St., St. Paul, Minn.; H-88, Arthur John Langer, 190 Concord St., St.Paul, Minn.; H-89, Walter M. Kerner, 463 Court St., Elizabeth, N. J.; H-90, Geo. Edwin Zimmerman, 856 Joseph Ave., Rochester, N. Y.; H-91, Manly J. Smith, Humbolt, Iowa; H-92, Karl M. Frey, 701 E. 4th St., Pueblo, Colo.; H-93, Christian Heim, No. Ave. Cor. East St., Pittsburgh, Pa.; H-94, John F. Kanealy, 120 S. Third St., Cedar Rapids, Iowa; H-95, Wm. Arnold Wry, 311 Broadway, Revere, Mass.; H-96, Geo. Carl Wirth, 13 W. Superior St., Duluth, Minn.; H-97, Joseph Garaci, 155 Central Park, Rochester, N. Y.; H-98, A. F. Kurth, 1581 University Ave., St. Paul, Minn.; H-99, Wm. C. Dambach, 371 Linwood Ave., Buffalo, N. Y.; H-100, Peter J. Emmert, Haubstadt, Ind.; H-101, Edw. L. Hoffman, 225 So. Broad St., Rochester, N. Y.; H-102, Leroy Smith, 2900 W. Van Buren St., Chicago, Ill.; H-103, Victor C. Sundberg, 1110 Payne Ave., St. Paul, Minn.; H-104, Henry B. Anderson, 458 So. Robert St., St. Paul, Minn.; H-105, Earl J. Waller, 2058 Marshall Ave., St. Paul, Minn.; H-106, Mansfield B. Harrald, 1017 Story St., Boone, Ia.; H-107, Horace C. Hurdle, 1101 W. Clay St., Richmond, Va.; H-108, John M. Nix, 129 Franklin St., Waterloo, Ia.; H-109, Edw. L. Steigleder, 3301 Brighton Road, Pittsburgh, Pa.; H-110, Jacob Scale, 325—7th St., Jersey City, N. J.; H-111, Robert Epstein, 285 Clinton Ave., Newark, N. J.; H-112, Fred Lewis Pfaff, 309 So. Beech St., Centralia, Ill.; H-113, Eugene Weber, P. O. Box 563, Salt Lake City, Utah; H-114, Abiram Lee Crawford, 600 E. Capital Ave., Springfield, Ill.; H-115, Frank J. Landgraf, 1017 E. 4th St., Waterloo, Ia.; H-116, Eugene L. Wade, 880 West Second South St., Salt Lake City, Utah; H-117, Wm. Carleton Young, 52 Main St., Hamburg, N. Y.; H-118, Frank F. Ulrich, Morgan, Utah; H-119, Lester E. Lenrow, 597 Valley Rd., Upper Montclair, N. J.; H-120, Geo. Henry Schoell, 973 E. 7th St., St. Paul, Minn.; H-121, Ralph John Wiemann, Main St., Bennett, Iowa; H-122, Robert M. Garrett, Jr., 135 Salem Ave., West Roanoke, Va.; H-123, Chester Arthur Short, Box 153, Clinton, Ark.; H-124, Arthur D. Barnes, 1324 Jefferson Ave., Buffalo, N. Y.; H-125, Leonard G. Kramer, 831 Franklin St., Michigan City, Ind.; H-126, Henry R. Scott, 2176 Wylie Ave., Pittsburgh, Pa.; H-127, Jos. C. Jonas, 401 Elizabeth Ave., Elizabeth, N. J.; H-128, Chas. Wm. Rusmiselle, Waynesboro, Va.; H-129, Louis W. Prange, 1402 W. Main St., Ft. Wayne, Ind.; H-130, Jos. Frank Holden, 953 W. 5th St., Winona, Minn.; H-131, Donald H. Ross, c/o Service Drug Co., Broad & York, Burlington, N. J.; H-132, Robert Wilson Nevin, 806 Linden Ave., E. Pittsburgh, Pa.; H-133, John A. Vanderbelt, 64 Monroe Ave., Rochester, N. Y.; H-134, Geo. F. Crouse, Smithton, Pa.; H-135, Albert Aiken, 2621 W. Girard Ave., Philadelphia, Pa.; H-136, Ferdinand L. Ulman, Baltimore & Hanover Sts., Baltimore, Md.; H-137, Ralph Zeitlin, 3708 Lexington, Chicago, Ill.; H-138, Ernest D. Hirschy, 121 No. Fremont St., Kewanee, Ill.; H-139, Samuel Morris Dintzis, 3546 W. Polk St., Chicago, Ill.; H-140, Pehr A. Lignell, 1022 Tower Ave., Superior, Wisc.; H-141, Lawrence B. Upton, 1203 W. Franklin St., Evansville, Ind; H-142, Chas. James Thomas, Cambridge, Iowa; H-143, Fred L. Hill, 212 N. Fremont St., Kewanee, Ill.; H-144, Herbert W. Poole, 3269 M St. N. W., Washington, D. C.; H-145, Ernest E. Dawson, Russell, Kans.; H-146, E. R. Stagmer, 813 Frederick Rd., Catonsville, Md.; H-147, Chas. F. Turner, Main St., Russell, Kans.; H-148, Mrs. Adele D. True, 17 Drummond St., Auburn, Maine; H-149, Earl Herbert Phillips, 204 Harvard St., S. E. Minneapolis, Minn.; H-150, J. Wm. Dorman, 2200 Jefferson St., Baltimore, Md.; H-151, Edw. J. Biles, 279 Bryant St., Buffalo, N. Y.; H-152, Orville J. Roberts, 326 N. Yellow Spring St., Springfield, Ohio; H-153, Edwin Herbert Sternberg, 3210 Arthington St., Chicago, Ill.; H-154, Godfrey W.

Kuntz, Bunker Hill, Kans.; H-155, Wm. D. Ayer, 337 E. 17th Ave., Denver, Colo.; H-156, Julius A. Lovins, 2044 Gaylord St., Denver, Colo.; H-157, J. Passmore Cheyney, 410 Race St., Phila., Pa.; H-158, Wm. Partee Weir, Manasquan, N. J.

(Motion No. 12.) Vote on applications of contributors to building fund, for membership in the American Pharmaceutical Association.

ROBERT P. FISCHELIS,
Secretary of the Council.

PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and Branches shall become the property of the Association with the understanding that they are not to be published in any other publication prior to their publication in those of the Association, except with the consent of the Council."—Part of Chapter VI, Article VI of the By-Laws.

Article IV of Chapter VII reads: "Each local branch having not less than 50 dues-paid members of the Association, holding not less than six meetings annually with an attendance of not less than 9 members at each meeting, and the proceedings of which shall have been submitted to the JOURNAL for publication, may elect one representative to the House of Delegates."

Reports of the meetings of the Local Branches should be mailed to the Editor on the day following the meeting, if possible. Minutes should be typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

BALTIMORE.

The first meeting of the Baltimore Branch of the A. Ph. A. for 1924–1925 was held at the Emerson Hotel on October 29, Dr. John C. Krantz, Jr., presiding.

Dr. I. M. Kolthoff of Holland, who had been invited to speak before the Branch, sent a letter explaining that a previous engagement prevented his being present.

Dr. Hermann Engelhardt spoke concerning the recent death of Mr. Joseph C. Roberts, who for fourteen years was superintendent of the Laboratories of Sharp and Dohme, and who was a member of the A. Ph. A. since 1910. Tributes to the memory of Mr. Roberts were paid by the members present.

The meeting was then mainly devoted to the reports of the national meetings of the A. Ph. A. in Buffalo and the N. A. R. D. in Washington, D. C.

Dr. Hermann Engelhardt gave a résumé of the papers presented at the Scientific Section of the A. Ph. A., giving in detail the important points brought out by the authors in the presentation of the different subjects.

Dr. Channing W. Harrison also made references to the interesting papers presented to the Scientific Section of the A. Ph. A., especially stressing the points brought out by Dr. A. R. Bliss in his paper on the Two Oils of Chenopodium.

Dr. Engelhardt and B. Olive Cole were the delegates of the Branch to the House of Delegates of the A. Ph. A. Miss Cole gave an outline of the proceedings of the House of Delegates, giving especially the report of the Committee on Resolutions, which committee dealt not only with resolutions presented to the House, but also with the recommendations contained in President Arny's address to the Convention.

Mr. Krantz, who had been asked to comment on the proceedings of the Section on Practical Pharmacy and Dispensing, gave a brief summary of recent researches on Solution of Chlorinated Soda, making special reference to the di-sodium hydrogen phosphate formula proposed for the next revision of the Pharmacopœia. The Lewis and Langmuir theory of atomic structure was reviewed with special reference to the electronic structure of the chlorine atom. It was shown that the statement "available chlorine" in chlorinated soda solutions or organic chlorine compounds refers to a positively charged chlorine atom, which due to its unstable character is easily transposed into molecular chlorine, thus linking atomic structure with these practical pharmaceutical problems.

Charles L. Meyer gave a report on the meeting of the N. A. R. D. in Washington, pointing out the many things accomplished at that meeting and the benefits derived from the successful drug show in connection therewith.

Dr. E. C. White, research chemist of Messrs. Hynson, Westcott & Dunning, and Associate

in Urology at the Johns Hopkins Medical School, will address the next meeting of the Branch. His subject will be "Organic Mercurials."

B. OLIVE COLE, *Secretary-Treasurer.*

DETROIT.

The October meeting of Detroit Branch of the American Pharmaceutical Association was held on the 10th of the month at Wayne County Medical Society. A large and enthusiastic gathering greeted the new officers at a dinner which preceded the business session.

President Chostner suggested that pharmacy be given publicity in radio talks. After some discussion it was moved to appoint a committee to look into the possibilities. A discussion followed relative to ways and means for securing new members.

President Chostner appointed R. T. Lakey, Walter H. Chase and Leonard A. Seltzer members of the Publicity Committee, and William A Hall, E. P. Stout, Ernest R. Crandall, Crosby Washburne, George M. Schettler and Charles H. Stocking as members of the Committee on Membership.

The speakers of the evening were J. H. Webster and Wilbur L. Scoville. The former gave an account of the Washington meeting of the N. A. R. D.; he referred to the address of President Coolidge as one of the big events in the history of the Association. He considered the address of Dr. James H. Beal a most interesting and instructive part of the program and quoted from it to impress that the number of those employed by the Government had increased so that, taking into consideration employees of the public in states, etc., every eleven not so employed were supporting one public servant. Mr. Webster also referred to the interesting talk by Mr. Gamble, of Omaha, now a banker, but formerly engaged in the drug business.

W. L. Scoville gave an account of the Convention of the American Pharmaceutical Association, in Buffalo, dwelling upon some of the papers read before the sections, the progress of the Headquarters Fund, of the A. PH. A., Book of Formulas, the History of American Pharmacy, etc.

The speakers were thanked by President Chostner. A motion carried to appoint a committee to prepare resolutions in memory of Charles F. Mann. The following were appointed: Harry B. Mason, Leonard A. Seltzer, and William A. Hall.

The November meeting of Detroit Branch, A. Ph. A., was held on the 21st, at the Wayne County Medical Society. The usual dinner preceded the meeting which was called to order by President Chostner.

Minutes of the October session were read and approved. Resulutions in memory of Charles F. Mann were presented by William A. Hall, and it was ordered that a copy be sent to the widow and members of the family.

IN MEMORY OF CHARLES F. MANN.

The Detroit Branch of the American Pharmaceutical Association would pay testimony to the great loss it has suffered in the death of Charles F. Mann. Men of his type are rare indeed. On the one hand he was modest, amiable, and utterly without display and ostentation. On the other, he had great ruggedness of character and could be depended upon to fight strenuously for the right when real issues were involved. He could be as unyielding as steel when espousing a cause which enlisted his interest, but he could also be gentleness itself in the circle of his friends.

Charles F. Mann labored all his life for pharmacy and pharmacists. At one time or another he was a dominating figure in such bodies as the Detroit Retail Druggists' Association, Michigan State Pharmaceutical Association, and the National Association of Retail Druggists. To these societies he gave generously of his time and brain, and was in turn rewarded with positions of trust and leadership. Of the National Association of Retail Druggists he was one of the founders, and in the several capacities of treasurer, president, and chairman of the executive committee he exercised a potent influence on American Pharmacy for many years.

But while strong in the councils of pharmacy, he was no less helpful in giving aid and suggestion to those less fortunate than himself. As chairman of the Prescott Memorial Fund he rendered invaluable assistance to many students for a considerable number of years. Everywhere he gave liberally in the interests of his fellowmen. No task was ever too arduous for him to undertake, no act of patriotism or loyalty too great for him to perform. He respected, and observed the ideals of truth, honor and service. Never did he consciously do a small or mean thing. Never did he knowingly do a selfish act. Never did he sacrifice the principle of right on the altar of

compromise, expediency, or personal interest. He was a man and what more need be said.

HARRY B. MASON, LEONARD A. SELTZER
WILLIAM A. HALL, *Chairman.*
BERNARD A. BIALK, *Secretary.*

The speaker of the evening was A. J. Filer, and his subject: "Exploitation of Proprietary Medicine." He began the discussion of his subject by saying that there were many druggists who at some time in their business career considered the advisability of putting a remedial agent or other article on the market; some have done so successfully, others did not succeed. The speaker named the essentials of success, in part, as follows: Merit of the article, package, trademark, perseverance, capital, and advertising. A general discussion followed. A vote of thanks was given the speaker. BERNARD A. BIALK, *Secretary.*

NEW YORK.

The November meeting of the New York Branch of the American Pharmaceutical Association was held in the Lecture Hall of the New York College of Pharmacy on Monday the 10th; President Smith in the chair.

The minutes of the preceding meeting were read and approved.

Treasurer's Report: The Treasurer, Mr. Gerstner, reported $363.69 in the treasury.

Education and Legislation: Chairman Clyde L. Eddy brought in an interesting report.

Communications: A letter was received by the Secretary from the New York Pharmaceutical Conference asking for a contribution to their Trade Fund. It was moved, seconded and carried that the sum of $25.00 be contributed for this work.

Dr. Jacob Diner was announced as the speaker of the evening on "Pharmaceutical Education Requirements." A discussion followed in which Messrs. Wimmer, Rusby, Eddy, Fischelis, Hostmann, Wolf and Currens participated.

A rising vote of thanks was extended to the speaker.

HUGO H. SCHAEFER, *Secretary.*

UNIVERSITY OF NORTH CAROLINA.

The twenty-first meeting of the University of North Carolina Branch of the A. Ph. A. was held in Phillips Hall on the evening of November 24. The Branch was very fortunate to have as speaker for this meeting Dr. E. F. Kelly, of Baltimore—a native "Tar Heel." In introducing the speaker Dean E. V. Howell, of the University School of Pharmacy, welcomed Dean Kelly back to North Carolina for his first visit in a number of years, and also paid high tribute to his contributions to pharmacy.

Dr. Kelly's subject was "Self-Determination for Pharmacists." He stated that pharmacy ought to make its status more definite to the public. He feared that there is an overlapping in some respects, particularly as regards the commercial phases, and this condition, he thought, might tend to bring about friction with other groups. Continuing further, Dr. Kelly said that the greatest duty of pharmacists at present is to coöperate with the physicians and dentists and others toward the betterment of public health conditions. He expressed the belief that the confusion in the drug business in some states resulting from prohibition would be entirely cleared up in the course of a few years, just as the narcotic situation automatically cleared up some fifteen years ago. He said the pharmaceutical profession would find some way to ban the "mushroom" drug stores where their chief business is to dispense bootleg liquor.

In addition to the students and several members of the Faculty there were present a number of druggists from nearby towns.

Reported by E. V. KYSER.

PHILADELPHIA.

The November meeting of the Philadelphia Branch of the American Pharmaceutical Association was held Tuesday evening, November 10th. It was in many respects the most unique and successful occasion in the history of the Branch in this city and reflects a great deal of credit upon the ingenuity and initiative of the present officers of the organization.

The customary dinner, which has become a regular feature of "Branch Night," was served at the Engineers' Club on Spruce Street and was enjoyed by over fifty members and guests, notable among whom were former Judge Patterson, Assistant District Attorney, Maurer, Drs. Wood and Coroner's Physician Wadsworth, and Howard Kirk, Esq., who were to play such auspicious parts later in the evening's program.

At eight o'clock sharp, in the Auditorium of the Philadelphia College of Pharmacy and Science, began the now famous "mock trial." With an audience that fairly filled the large auditorium, President Harrisson turned over the conduct of the evening's program to the gentlemen of the law who had come there to preside over and participate in the serious business of holding a court of justice; a mock

trial indeed, and yet a most impressive, well-acted, even if unrehearsed, object lesson to all who came to see and listen. In the judgment seat, the Honorable John M. Patterson presided with his wonted grace and dignity. The clerk of the court, Mr. Baldauf, who is clerk in one of the city courts, opened the sessions in the customary formal fashion and District Attorney Maurer introduced, as the first case for trial, a bill of indictment against one Otto Kraus, a druggist of Sixth and Federal Streets in Philadelphia, charging him with the grave incrimination of "involuntary manslaughter." There was then impanelled to serve as jurors the following duodecimate of "impartial and unwitting persons." Ambrose Hunsberger, Bank President; Otto W. Osterlund, Financier; Mrs. Josiah C. Peacock, Tannin Expert; Mrs. M. R. LaWall, Horticulturist; Mrs. W. E. Lee, Wonardist; Jos. W. England, Historian; Ellen Cawley, Florist; J. S. Beetem, College Registrar; W. L. Cliffe, Legislator; Raymond Hendrickson, Optimist.

Objection was raised by the respective lawyers to certain other jurors whose names were read, mostly on grounds of personal appearance. However, the twelve, tried and true, were finally placed under oath and throughout the trial behaved in a most dignified way, proud of their authority and determined to look only in the direction of justice.

Here sat the busy court stenographer, Miss Kathryn Myers—and to the one side whispering ominously stood the prosecuting attorney, John H. Maurer—eagle-eyed and agile-worded —and his chemical expert, Professor Charles H. LaWall, veteran of many a forensic tussle. Beside them was their sealed evidence—the ghastly viscera (?) of the poisoned man (about whom we shall now soon learn) and the rest of the poison that occasioned the death of the victim.

Opposite were seated the defending lawyer, Howard Kirk, quick and accustomed to complex commissions—and his vade-mecum in emergency, the eminent Bucks County Chemist, Joseph W. E. Harrisson. There also was the nationally known post-mortem artist, Dr. Wadsworth, for years Coroner's Physician in Philadelphia, who according to his own testimony, "has examined *some* thousands of human remains." There were also lined up the witnesses who will be referred to later.

But the saddest figure of the entire group reposed in the care of Officer Wilcox seated in the prisoners' bar. It was Otto Kraus. He, it was charged, had sold to a Mrs. Areolus, the wife of the original owner of the entrails in the chemical expert's possession, a bottle of citrate of magnesia, which contained bichloride of mercury, and which resulted in the death of the unfortunate Mr. Areolus.

Mrs. Areolus, in the person of Mrs. Ada Capwell, figured as the star witness, and recited in terse fashion the sad story of her husband's sore, untimely end. How he had been long a victim of kidney disease and how upon October 4th he had suffered one of his wonted discomforts and sought without medical aid to relieve his pain and distress "with magnesia." How she had sent her star boarder to Mr. Kraus, the druggist, to secure the bottle of the precious panacea, and a half of which she herself had given to her husband, only to have him suffer worse and pass away directly without even a doctor's helping hand. Her testimony seemed clear and she was steadfast through all the cross-examination.

The star boarder, in the person of Ralph Calvert, then underwent the ordeal and suffered certain mental relapses which only added to the prosecutor's case and further frightened the poor defendant.

Next came the Coroner's Physician, who testified to finding evidence of corrosive poison on the carcass of the one labelled Areolus, No. 929. He also bore up well under very cross questioning.

Then came the chemist who found, in the liquid remaining in the bottle, the equivalent of several grains of bichloride of mercury and a smaller amount in the stomach of the erstwhile. Cross fire at him availed the defense but little, except to have him admit that he found in addition to the bichloride certain indefinite evidence of sodium citrate. A ray of hope for the defense.

Constant quarrels by the objecting opposing lawyers added spice to the clever acting.

Then came the exhibit of the defense. The chemical expert testified as to the customary method of manufacturing citrate of magnesia in the drug store and claimed that it would have been unlikely that the defendant could by neglect have placed in the citrate solution a blue bichloride tablet (the only kind he had in his store). The chemist for the prosecution had found sodium citrate in the liquid, which was ample proof that the customary carbonating tablet (in this instance the soda and not the potassium had been used) had been added by the defendant. Certainly he would not have

added both the carbonating tablet and a bichloride tablet.

Next came the defendant himself, who admitted the sale—but did not recall it with definiteness—indeed he could not recall much of anything with definiteness. He admitted waiting upon the "star boarder" of Mrs. Areolus mechanically and without any certain recollection of any particular part of the transaction. He insisted, however, that a bottle of citrate of magnesia was always worth more than the quarter usually paid for it.

Cross examination worked this nonchalance and mechanical performance complex to the utmost, in order to make an impression upon the jury.

Upon this, both sides rested the case and it looked rather badly for the defendant. However, from the audience at this juncture came a pale, visibly nervous person who sought the defending lawyer and whispered a few large words to him and exhibited a much larger book.

The Judge granted permission to reopen the case—for a new witness had turned up in the person of one Ivor Griffith, a small shop apothecary who had read about the case and had come, to Mr. Kraus's help, as a willing witness. He electrified the court by testifying that he had sold Mrs. Areolus two days previous to the purchase of the citrate from Mr. Kraus, a bottle of bichloride tablets and had made the entry upon his poison register which he exhibited. The prosecuting attorney made light of his testimony, and ridiculed his poison register which was poorly kept and which was not legally authoritative in that the entries were not made by the persons procuring the toxic substance, a specification which the law clearly demanded. In this statement, which was erroneous, he was, however, not contradicted.

The last witness dismissed, the opposing lawyers presented their final pleas to the jury, the prosecutor angrily demanding his Krausian pound of flesh and the defending masculine Portia ably couching his "summing up" in tender, tearful words that completely thawed the sympathetic hearts of the ladies on the jury who by the time the Honorable Judge had delivered his comprehensive and careful "charge to the Jury" were able to convince the men in the panel that a man of Mr. Kraus's noble mien could never have committed, in error or otherwide, a deed as dastardly as this, and they accordingly pronounced a verdict of "Not Guilty."

An account such as this can hardly do justice to the educational value of the occasion, but it is worthy to note that the Judge, at the conclusion of the trial, agreed with certain persons conversing with him that it was the most realistic "mock" trial that he had ever been privileged to conduct.

There had been no rehearsing or coaching of witnesses—everything had been done spontaneously and extemporaneously and there was not a single hitch in the entire program. To conclude the evening, President Harrisson introduced to the audience, numbering about three hundred, those who had participated in the affair, and a general vote of thanks was passed in appreciation of the good offices of the gentlemen of the law who had so ably and willingly helped to make the trial a complete success.

It is suggested that other Branches of the Association follow the example of the Philadelphia section in staging this unique occasion, which portrayed so vividly the actual workings of a court of law and brought to the minds of pharmacists who were there the need for eternal care and vigilance in the conduct of their professional duties.—Ivor Griffith.

ADLEY B. NICHOLS, *Secretary.*

UNIVERSITY OF WASHINGTON.

The monthly meeting of the University of Washington Branch was held on the evening of November 8th, at Bagley Hall. Reports of the Secretary and Treasurer were received. Further business was dispensed with and President Lehman introduced the speaker of the evening, G. B. Davies, of the United States Rubber Co.

Fifty-five members were present and they were given, together with a wealth of interesting detail, valuable information about the following:

1. The buying of Rubber Supplies.
2. Methods of caring for and displaying the same.
3. The instructions to be imparted to the customer upon making a sale. Following the lecture a general discussion was participated in. The questions answered by Mr. Davies were numerous indeed. A rising vote of appreciation was given the speaker. The ballot for the coming A. Ph. A. election was discussed and all members were requested to "vote early." The fact that Western representation in the administrative bodies was more conspicuous by its absence than presence was commented upon. Following the discussion the meeting adjourned.

HARRIET SNIDOW, *Secretary.*

EDITORIAL NOTES

Editor: E. G. EBERLE, Bourse Building, Philadelphia, Pa.

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THE PROPOSED MUSEUM AND LIBRARY OF THE A. PH. A. HEADQUARTERS BUILDING.

The President of the United States, Senators, Congressmen, representatives of civic, literary, scientific and educational organizations, were invited to attend a reception in Washington on December 3, in honor of Dr. George F. Bowerman's service to the public. This service has been rendered during twenty years in the library of the City of Washington. The extension work of the library has developed under the direction of the librarian, but it is to the intensive work we wish to make reference, whereby the library ministers to all classes of the community; through its industrial division it helps all classes of business and professional men; its pamphlet and clipping collections furnish up-to-date information to newspaper men and others.

The National Wholesale Druggists' Association has recently compiled a history of its fifty years of service, which presents not only an historical account of events but is interestingly told, and serves as a reference work of the annual proceedings of that organization. The acknowledgment of copies of the History of the N. W. D. A. by the library of the School of Business of Columbia University brings the thought that Industrial and Business courses are not complete without information relative to the country's resources, their utilization, manufacture, and their part in trade and commerce. It emphasizes the need of similar compilations by all organizations—national, state and local—so their activities and importance may be recorded and add to the sum of knowledge.

Another matter that impressed the importance of historical records at this time was a request for data from Assistant Curator of the Museum of Charleston, John Bennett, relative to the time when American pharmacists or apothecaries were first licensed. There is no question regarding the enactment of South Carolina, December 18, 1817, which provided for the licensing of apothecaries in the state, requiring also an examination by the Medical Society of South Carolina or the Board of Physicians of Columbia, S. C. The need for such legislation was discussed as early as 1793. The first pharmacy board of Georgia was organized in 1826. Here then are points of interest as to what states and cities can enter into priority contests. The first apothecary's license was granted in Charleston to Richard Johnson, May 1, 1818. Mr. Bennett* will be grateful for information bearing on this subject. This is also a matter of consideration by several of the editors of the History of American Pharmacy, as it concerns pharmaceutical education, legislation and history of boards of pharmacy.

The fine progress made in the compilation of the History of American Pharmacy speaks well for the editors and brings to mind the further thought that the history of nearly every state differs, just as history relating to other activities is more or less distinctive. Honoring Don Pedro Menendez de Aviles (at Aviles,

* See JOURNAL A. PH. A., June, 1921, p. 475, and pp. 661–665, August JOURNAL, 1923.

Spain) recently, recalls the founding of America's oldest city, St. Augustine, and also that in what are known as newer states there are cities and towns that were founded before the signing of the Declaration of Independence—San Antonio in 1714, and Isleta (New Mexico) prior to 1600. The Spanish missions were hospitals as well as forts; cities have grown up that were begun as communistic colonies, for example, New Braunfels (German) and what is now Dallas (French); doubtless the early history of pharmacy was impressed by these pioneers and, particularly, the materia medica. The French settlement referred to would probably have been entirely wiped out if it had not been for the discovery of *Krameria* in that section. These notations are incidental, but it is hoped the references will stimulate an interest in the Museum and Library, which will have its beginning as soon as the A. Ph. A. Headquarters Fund has been completed.

THE BUBONIC AND PNEUMONIC PLAGUE.

Fortunately the brief epidemic of pneumonic plague is under control; there is, however, the constant danger of outbreak until the sources of infection have been destroyed. Dr. Wu Lien-teh, Director and Chief Medical Officer of the North Manchurian Plague Prevention Service, is now carrying on special research work at Johns Hopkins. The two forms of the disease are the result of the same germ—the pneumonic condition causes a more rapid spread than the bubonic because of the accompanying cough; the bubonic form is transmitted by fleas that have been in contact with members of the rat family. In Manchuria the marmot, allied to the American ground hog, is the carrier, and, unfortunately, the fur of marmots provides the living for a considerable part of the population, therefore their destruction would destroy the livelihood of many. Preventative measures hold down the number of cases of the disease.

ERADICATING BOVINE TUBERCULOSIS.

A report of the Tuberculosis Eradication Division of the United States Department of Agriculture shows increasing economy in the work of eradicating bovine tuberculosis from the country. The average cost of a tuberculin test made during the year ended June 30 was 30 cents. The previous year the average cost was 35 cents; the year before that, 46 cents. This reduction in two years of approximately one-third was accomplished by confining activities more largely to circumscribed areas. Much time and expense were thus saved by reducing the need of travel.

CARBON MONOXIDE POISONING IN SMALL GARAGES.

The newspapers recently carried a news item of the death from carbon monoxide poisoning, of a prominent Baltimore man, who was found dead in his garage with the engine of his automobile still running. With the onset of colder weather such accidents will probably increase in frequency, says the Surgeon General of the United States Public Health Service, who warns automobile owners of the danger involved in running a gasoline engine in a small closed space for any considerable period of time.

In tests of the exhaust of a small 23 horsepower automobile engine it has been found that it discharged approximately 25 cubic feet of gas per minute, samples of which gave an average of 6 per cent. carbon monoxide, or 1.5 cubic feet of deadly carbon monoxide gas per minute. Of course larger engines will give off more. Now a ratio of 15 parts carbon monoxide to 10,000 parts of air is considered a dangerous concentration to be exposed to for a considerable time; and the small 23 horsepower engine in "warming up" and giving off only one cubic foot of carbon monoxide per minute would contaminate the air of a small closed garage, 10 by 10 by 20 feet, to the danger point in about three minutes.

TREATMENT OF CARBUNCLE BY MAGNESIUM SULPHATE.

During the last six years, the author has treated twenty-eight cases of carbuncle by a very simple method with no deaths. Most of the cases occurred at the nape of the neck or on the back, but whatever the situation the treatment is the same. This consists in applying to the whole of the inflamed area a paste of magnesium sulphate prepared as follows:—In a hot mortar is placed 11 ounces of glycerin, and 1.5 lb. of dried and powdered magnesium sulphate is added, slowly stirring and mixing with a warm pestle all the time. The product is a thick white cream, which, on account of its hygroscopic nature must be kept in a covered jar. The paste is applied, spread thickly on a piece of sterile, white lint sufficiently large to cover the whole of the inflamed area. A piece of jaconet is placed over the lint to cover it entirely, and cotton-wool in abundance over

and around the part. The dressing is left unchanged for twelve or twenty-four hours, and then renewed. Within a few days, the central slough separates and a raw granulating surface is left. The soothing effect of the paste is very marked, and the relief of the patient after one or two applications is very great. Appropriate after-treatment is described.—A. E. Morrison, F.R.C.S. (*Brit. Med. Journ.*, April 19, 1924, 703)—Through *Pharmaceutical Jour.*

HUNGARY REQUIRES LICENSES FROM GATHERERS OF AND TRADERS IN CRUDE DRUGS.

In order to establish confidence in Hungarian crude drugs the Bureau of Medicinal and Industrial Plants issues licenses to gatherers and dealers. These licensed medicinal plant traders are divided into two groups: domestic brokers and exporters. The brokers are the retail dealers who are allowed to trade only with the domestic drug houses or exporters. The exporters are the wholesale dealers, who must submit their goods for export to tests by the testing station of the Bureau of Medicinal & Industrial Plants. At present there are 54 export firms in Hungary, of which a considerable number are corporations with large invested capital, and 2,050 domestic dealers. The Bureau has the right to revoke the license of anyone guilty of breaking its regulations and to publish the name of the offender in the official organ, "Herba." This control has been so successful that the government department is now working in complete harmony with the trade association, which has as members producers as well as dealers in medicinal plants.—Through *Pharmaceutical Era.*

DARLINGTON'S TEN COMMANDMENTS OF HEALTH.

Dr. Thomas Darlington, in an address at the close of the first annual American Education Week Exposition, in New York City, presented the following "Ten Health Commandments:"

1. Keep your mouth closed when breathing, also when angry.
2. Drink cool water with your meals, also between them.
3. Bathe daily, a shower, if possible.
4. Eat slowly; this leads to eating sparingly. Make your meal a ceremonial pleasure.
5. Exercise daily and breathe deeply while so doing, but avoid over-exertion and never eat when fatigued.
6. Never read or transact any business while eating.
7. Work ten hours, sleep eight and use the balance for recreation and meals. Always rest on Sunday.
8. Ever keep a contented mind. Equanimity means longevity.
9. Neglect no portion of the body. Employ a physician to examine you at regular intervals and so watch for the beginnings of disease and build up resistance and pay some attention to his opinion and direction.
10. Moderation in all things.

He also said that the enforcement of law is better done by education than by penalties.

TOXIC EFFECTS OF TETRA-ETHYL LEAD.

The hazard of tetra-ethyl lead is in manufacturing plants. Sodium thiosulphate has been mentioned as a chemical antidote for its toxic effects, such as resulting dermatitis, and jaundice; it is said to assist in the restoration of kidney function. An editorial in the *Jour. A. M. A.*, November 8, concludes "physicians may watch for possible manifestations of this form of lead poisoning, even though the evidence thus far available is negative."*

*Except in manufacturing plants and under similar conditions; it seems a remote inference that there will be danger of lead accumulation in the streets; this, however, may be otherwise in garages.—EDITOR.

PHARMACISTS IN LITERATURE.

Another pharmacist appears in a new novel by James Agate, "Blessed Are the Rich." Very seldom is the pharmacist in fiction a character we have pardonable pride in—some novelist should be encouraged to give us a less depressing representative or a worthier example than is usually described.

PHARMACISTS IN STATE LEGISLATURES.

Lee S. North was elected to the Pennsylvania Senate. H. S. Caldwell, President of Oklahoma City Retail Druggists' Club, Burton Kidd of Poteau and L. W. Weaver are Oklahoma legislators, as well as retail pharmacists.

NEW PUBLICATIONS.

The Messenger is to be published monthly by the College of Pharmacy of the City of New York, Columbia University; the editor is Prof. Curt P. Wimmer.

The Bronx Pharmacist is to appear at regular intervals and is edited by S. Kopald.

Success to both publications.

PERSONAL AND NEWS ITEMS.

A commendatory review of the YEAR BOOK, A. PH. A., Vol. 11, 1922, by our fellow-member, **Prof. Otto Raubenheimer** appears in the *Pharmazeutische Zentralhalle*, No. 46, Nov. 13, 1924. The publication referred to was established by the late Dr. Hermann Hager (honorary member A. Ph. A.). The editor is Prof. Dr. Paul Borisch, and the publisher is Theodor Steinkopf, Dresden.

Thomas D. Mc Elhenie, honorary president of the American Pharmaceutical Association, 1922–1923, suffered a stroke of apoplexy, November 19, and was taken to Cumberland Street Hospital, Brooklyn. We are indebted to Professor Raubenheimer for this information. Mr. Mc Elhenie was the first President of the New York Veteran Druggists' Association.

Dr. Joseph Jacobs, of Atlanta, Ga., and Miss Elizabeth Smith were married November 11, 1924. Congratulations are extended.

Editor Hugo Kantrowitz has arranged an itinerary for an American Pharmacists' Tour of Europe under the auspices of *Apotheker Zeitung* in 1925, leaving New York July 9 and returning September 1.

J. H. Rehfuss, now of Stockton, Calif., a former president of the Kings County Pharmaceutical Society, paid a visit to New York, accompanied by Mrs. Rehfuss. Friends of the visitors tendered them a dinner at the McAlpin.

Carl Weeks spoke on "General Business Conditions in Merchandising" before Idaho Pharmaceutical Association, at Boise; he stressed the efforts to raise the plane of the profession of pharmacy and advocated adherence to the ethics of pharmacy.

W. Bruce Philip, Chairman of the House of Delegates, A. Ph. A., in his address before the Idaho Association said that the public expected protection as well as service, and the efforts of pharmacists should be directed to give both.

Clarence O. Ballou is always an advocate of the American Pharmaceutical Association and carried its message to his fellow-members at the Boise meeting.

Director of the division of foods, feeds and drugs, **H. M. Robertson,** of the Alabama Department of Agriculture, is warning dealers, who are not registered pharmacists, that the list of drugs that can be handled by them is restricted; domestic and household remedies must be sold in original and unbroken packages.

Secretary Samuel C. Henry, of the N. A. R. D., advises druggists to give most careful thought and consideration before signing acceptances, particularly those given with orders or in advance of the receipt of merchandise.

"*The Carolina Journal of Pharmacy* for November is dedicated to **Kelly Edmond Bennett,** of Bryson City, in recognition of his faithful work as an examiner on the North Carolina Board of Pharmacy, and in appreciation of his loyal support of the North Carolina Pharmaceutical Association and its policies, particularly during his service as a member of the State Senate."

William Jay Schieffelin, New York, an advocate of the metric system, says that comparative tests in a commercial manufacturing laboratory showed that with the system there is a possible saving of time of about 50 per cent. in writing, 54 per cent. in weighing, and 55 per cent. in pricing.

The Chandler medal (**Prof. Charles F. Chandler**) for 1924 has been awarded to **Prof. E. C. Kendall** of the Mayo Foundation, University of Minnesota. Prof. Kendall was the first to isolate the active constituent of the thyroid.

Wilhelm Bodemann, reporting the round table celebration of **Samuel C. Henry's** anniversary, speaks of it as a "Wiegenfest," and also reports a *post festum* when the Secretary of the Milwaukee Veterans, **E. G. Raeuber,** was pleased to apply a deserved measure of appreciation in terms of friendship.

George R. Christ, President of New York State Pharmaceutical Association, is now a veteran of the New York Association; he also has attained his majority in the present ownership of his pharmacy in Brooklyn.

Prescott R. Loveland—in an article of the *Pharmaceutical Era*, of November 22—says "the time has arrived when pharmacists should coöperate to drive the fakirs out" of pharmacy.

Mrs. J. Floyd Tilford is President of the Women's Auxiliary of Kansas Pharmaceutical Association.

A manufacturer desires to engage several men for detail work among physicians. A good salary is assured; aside from usual qualifications some knowledge of chemistry applying to foods is necessary. Those wishing to apply should address Mr. Z. L. Potter, Clark Music Building, Syracuse, N. Y.

Howard M. Gore, Governor-elect of West Virginia, is now Secretary of Agriculture, succeeding the late Henry C. Wallace. In

this connection appreciation may be expressed of the officials who have been heads of this important Department. The Association and the JOURNAL have received much help and assistance from the Bureau of Chemistry and those associated therewith. This may also be said of other divisions of the Government—that of Commerce and Public Health Service. It is hoped at some time to speak at greater length of the service rendered to pharmacy and pharmacists and thereby give an expression of appreciation.

The organizations of the drug trade and pharmacy have been in conference this month with Secretary Hoover, for the discussion of means whereby uniformity may aid efficiency. Many articles sold in drug stores are put up in more sizes of packages than economy demands and, likewise, there are some package sizes of pharmaceuticals that can be discontinued; the same may be said of combinations in preparations, wherein an adjustment would serve economy. These are problems not only of the retailers, but of the wholesalers and manufacturers; conferences for such discussions will prove of great value.

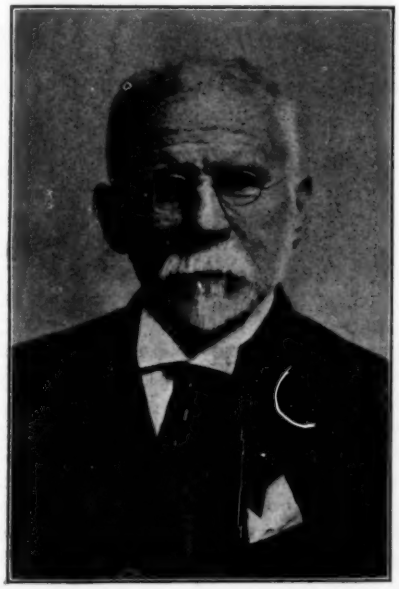
Secretary Hoover has a wonderful organization with which the public should have a better acquaintance. The Department in its various divisions renders most efficient service; unfortunately, space in this issue permits only of a reference to the Commerce Department's valuable Year Book, recently issued, which contains comprehensive economic information on domestic and foreign trade. An example of service is given in the following—"on the basis of an investigation involving 3,675 inquiries addressed by business firms to the Bureau it was found that the resulting business amounted to about $427 per inquiry."

It is now 50 years since the "Pharmacographia" by F. A. Flückiger and Daniel Hanbury was published; both authors were honorary members of the American Pharmaceutical Association.

OBITUARY.

THOMAS DE ARMOND Mc ELHENIE.

Thomas D. Mc Elhenie, Honorary President of the American Pharmaceutical Association, 1923–1924, died November 27, in Cumberland St. Hospital, Brooklyn, of uremic poisoning. Mention is made elsewhere of his sudden illness, which resulted in death.



THOMAS D. Mc ELHENIE.

The deceased affiliated with the American Pharmaceutical Association in 1872; he was one of the founders of Kings County Pharmaceutical Society (1877), and was Honorary President and a charter member of the New York Veteran Druggists' association.

Mr. Mc Elhenie closed an historical article, "Reminiscences," with these words: "I have done nothing notable but have tried to keep the faith in good pharmacy." * In the May issue of the JOURNAL for 1922, there is a brief sketch and a half-tone of the deceased is the frontispiece of that issue. Mrs. Mc Elhenie died July 3, 1921.[1]

Mr. Mc Elhenie entered the drug business in 1865 as an employee of Zimmerman & Company of Wooster, Ohio; in 1870 he matriculated at the Philadelphia College of Pharmacy and graduated in 1872. After graduation he re-

* This article contains events in the life of the deceased, also the contribution "Memories of Seventy-Two;" the former is printed in Vol. VI, p. 276, the latter in Vol. XII, p. 437. For sketch see also, Vol. XI, pp. 323, 668, 714.

[1] See p. 557, July JOURNAL for 1921.

turned to Ohio; in 1874, he engaged with George C. Sands, successor to Prof. P. W. Bedford; in 1876, he opened the drug store at the corner of DeKalb Ave. & Ryerson St., Brooklyn, and this he continued until 1922, when the building in which the store was located passed to other ownership—a 46-years' record at one location. Soon after selling his business Mr. Mc Elhenie engaged with Johnson & Johnson.

While Mr. Mc Elhenie closed his reminiscences with the quoted modest statement of this sketch, his activities are part of the history of pharmacy in Brooklyn, and the JOURNAL and PROCEEDINGS of the A. PH. A. contain a number of contributions which speak for his devotion to pharmacy, and observation. He was ever ready to share in association work and esteemed the friendship of his co-workers; this he evidenced by the attachment for the American Pharmaceutical Association—no member in attendance at the last Cleveland meeting enjoyed the occasion more than our lamented member, and his first attendance at a meeting of the Association, which was held in Cleveland in 1872, was often referred to by him.

He was loyal to his profession, his co-workers and friends, he did not forget his early home and here he rests beside the one who shared his joys and sorrows for nearly a half century—at Wooster, Ohio. He was born at Easton, Ohio October, 15, 1849.

Funeral services were held at Mr. Mc Elhenie's residence, in Brooklyn; after the conclusion of the Church services, members of Montauk Lodge F. & A. M. paid honor to the memory of their brother. The funeral was attended by many pharmacists, all the officers and many members of New York Veteran Druggists' Association were present; also representatives of other associations. There were many floral tributes. The body was taken to Wooster, Ohio, for burial. He served well and loyally and with credit to himself and pharmacy.

EDWIN PERKINS ANTHONY.

Edwin P. Anthony, member of the American Pharmaceutical Association since 1909, died at his home in Providence, R. I., November 4. The deceased was born in Usquepaugh, December 19, 1850, the son of Dr. Edwin and Mrs. E. Perkins Anthony. Here he received his early education in the public schools and in East Greenwich Academy.

As a young man, Mr. Anthony was employed in the North Main Street store of William B. Blanding, in Providence. In 1895 he opened up one of the finest retail drug stores on the East Side of the City, at 178 Angell Street, where he continued in business up to the time of his death.

Mr. Anthony lived quietly and was a lover of the outdoor life; he was a member of the Sons of the American Revolution, the Rhode Island Pharmaceutical Association and, as before stated, of the American Pharmaceutical Association. The deceased never married and is survived by a sister, Emily J. Anthony, and a nephew, Dr. Fred A. Arnold of Newport, R. I.

R. W. B.

WILLIAM WILSON IRWIN.

W. W. Irwin, of Wheeling, W. Va., member of the American Pharmaceutical Association since 1914, died at the West Penn Hospital,

W. W. IRWIN.

Pittsburgh, Pa., aged 63 years, of uremic poisoning. Mr. Irwin became seriously ill while in the latter city and was taken to the hospital. He submitted to an operation and rallied splendidly for a time. Mr. Irwin was born in Kentucky, but removed to Wheeling and here most of his life was spent.

For many years, prior to his appointment as postmaster by President Wilson, Mr. Irwin conducted a drug store. He was President of the West Virginia Pharmaceutical Association

in 1909–1910, but was best known nationally through his Masonic affiliations. He was Imperial Potentate of the Shrine 1913–1914, when this body met in Dallas, Texas; he held membership in Osiris Temple at Wheeling, and was a past commander of Wheeling Commandery of Knights Templar. The deceased is survived by his widow, Mrs. Mary Oft Irwin.

HENRY G. SMITH.

Henry G. Smith, formerly Assistant Curator and Economic Botanist of the Technological Museum, Sydney, New South Wales, died September 19, aged 72 years. Mr. Smith is best known to us through his researches and investigations of the Eucalypti—the chemistry of the essential oils, embodied in the monumental work on the subject in collaboration with J. H. Maiden and R. T. Baker. According to the *Pharmaceutical Journal*, one of the last papers he wrote was entitled "Piperitone, the Ketone of Eucalyptus Oil." This was read at the Adelaide (South Australia) meeting of the Australasian Association for the Advancement of Science, in the Pharmacy Section, August, 1924. The proofs of the paper were corrected by Mr. Smith only three days before his death. The paper is published in full in the September issue of the *Australasian Journal of Pharmacy*.

HENRY LINCOLN CARLETON.

Just before completing this number of the JOURNAL, we are advised of the death, on December 4, of H. L. Carleton, at his home in Taylor, Tex. Mr. Carleton was one of the organizers of Texas Pharmaceutical Association, in 1879, and one of the earlier Presidents of this association; it was largely through his efforts that the first pharmacy law of Texas was passed, and the Department of Pharmacy established in the University of Texas.

For many years the deceased was manager of Morley Drug Company in Austin, Texas; in this store "O. Henry" was for a time employed. About 15 years ago Mr. Carleton organized Thames Drug Company, at Taylor, Tex., of which he was President. During his active years, no one contributed more to pharmacy in Texas than the deceased and for many years he was a member of the Texas Board of Pharmacy. Baylor University honored him with the degree of Master in Pharmacy.

Mr. Carleton was a 33° Mason of the Southern Jurisdiction. He was unassuming and retiring, but he never feared nor failed to do right—he was a true friend.

SOCIETIES AND COLLEGES.

MEETING MONTHS AND SECRETARIES OF STATE BOARDS OF PHARMACY.

FOR DAYS AND PLACE OF MEETINGS, ADDRESS THE SECRETARY OF THE BOARD.

Alabama—October. W. E. Bingham, Tuscaloosa.

Alaska—N. R. Walker, Ketchikan.

Arizona—April and November. A. G. Hulett, Phoenix.

Arkansas—June and November. Frank Schachleiter, Little Rock.

California—January, April, July and October. Louis Zeh, 870 Market Street, San Francisco.

Colorado—Usually about the middle of January, May and September. Charles J. Clayton, Denver.

Connecticut—January, April, July and October. H. M. Lerou, Norwich.

Delaware—January, April, July and October. John O. Bosley, Wilmington.

District of Columbia—January, April, July and October. W. T. Kerfoot, Jr., Seventh and L Streets, N. W., Washington.

Florida—January and June. J. H. Haughton, Palatka.

Georgia—Thrice a year. Emmett L. Murray, of Americus.

Hawaii—Call meetings. A. J. Gignoux, Honolulu.

Idaho—January and July. Charles Laurenson, Director of Bureau of Licenses, Boise.

Illinois—January, March, June, August and October. V. C. Michaels, Superintendent of Registration, Springfield.

Indiana—January, April, July and October. Frank B. Meyer, Gary, is Secretary; send official communications to Board of Pharmacy, State House, Indianapolis.

Iowa—January, April, June and November. Harry E. Eaton, Des Moines.

Kansas—February, May, August and November. David F. Deem, Stark.

Kentucky—January, April, July and October. J. W. Gayle, Frankfort.

Louisiana—February, May, August and November. J. E. Guess, Hammond.

Maine—February, April, June, August, October and December. Frank T. Crane, Machias.

Maryland—June and October. George A. Bunting, 102 East Lafayette Avenue, Baltimore.

Massachusetts—About once a month. Carlton B. Wheeler, State House, Boston.

Michigan—January, March, June, August and November. H. H. Hoffman, director, Lansing.

Minnesota—January, April, July and October. John W. Gardavel, 3002 Twenty-seventh Street, South Minneapolis.

Mississippi—January and July. Charles E. Wilson, Corinth.

Missouri—January, April, June and October. E. H. Riske, Independence.

Montana—April and October. J. A. Riedel, Boulder.

Nebraska—May and November. J. D. Case, Superintendent of Health and Welfare, Lincoln.

Nevada—May and November. F. M. Clark, Ely.

New Hampshire—Each month, except July, August and December. James L. Dow, Lancaster.

New Jersey—January, April, July and October. Edgar R. Sparks, Burlington.

New Mexico—Spring and fall. D. W. Hayden, Clayton.

New York—January, May, June and September. W. L. Bradt, Albany.

North Carolina—June and November. F. W. Hancock, Oxford.

North Dakota—June and November. W. S. Parker, Lisbon.

Ohio—January, April, June and October. M. N. Ford, Columbus.

Oklahoma—February, June and November. Tom R. Hadley, Oklahoma City.

Oregon—January, May and September. Frank S. Ward, Fitzpatrick Building, Portland.

Pennsylvania—January, April, June and October. L. L. Walton, Williamsport.

Porto Rico—January and June. Carlos G. de Quevedo, San Juan.

Rhode Island—Each month. M. H. Corrigan, Providence.

South Carolina—March, July and November. Frank M. Smith, 117 Ashley Avenue, Charleston.

South Dakota—May, October and call. D. F. Dexter, Canton.

Tennessee—March, July and November. Jerome B. Sands, Nashville.

Texas—January, May and September. W. H. Cousins, Dallas.

Utah—January, April, July and October. Director of Licenses, Salt Lake City.

Vermont—February, June and October. Fred D. Pierce, Barton.

Virginia—June and November. A. L. I. Winne, Richmond.

Washington—January and June. Fred J. Dibble, Director of Licenses, Olympia.

West Virginia—Three times a year. Alfred Walker, Sutton.

Wisconsin—January, April, July and October. Henry G. Ruenzel, 2332 Vliet Street, Milwaukee.

Wyoming—January, April, August and October. Ray J. Cook, Casper.

National Association of Boards of Pharmacy—H. C. Christensen, 130 North Wells Street, Chicago, Ill.

BULLETINS OF THE DRUG TRADE BUREAU OF PUBLIC INFORMATION.

Director Robert P. Fischelis has issued Bulletins B-40 and B-41 of the Drug Trade Bureau of Public Information. The former refers to the reduced premiums on fire insurance for wholesale drug houses, because of the building constructions and further protection by sprinkler systems, fire drills, etc., proper storing of certain stock and means for handling products that contribute to fire causes and accidents. The late George W. Lattimer gave much study to these subjects, and the reports of the Committee, of which he was Chairman for many years, have been of direct and indirect value to the drug trade and other industries. Bulletin B-41 is concerned chiefly with educational promotions and interests of the National Wholesale Druggists' Association. Its coöperation in these matters extends to all engaged in pharmacy and the drug business. The bulletin concludes by saying—"This is regarded as but the beginning of a comprehensive educational campaign on sound merchandising methods and principles having for its object the prosperity of the retailer, wholesaler and manufacturer."

AMERICAN PHARMACEUTICAL MANUFACTURERS' ASSOCIATION.

J. H. Foy, President of the American Pharmaceutical Manufacturers' Association, has appointed members of several committees which

are charged with carrying on various branches of the work of the organization. The chairmen are as follows:—Legislative, G. C. Pratt, Philadelphia; costs, overhead and uniform accounting, F. A. Mallett, Des Moines; business policy, R. M. Cain, Indianapolis; membership, C. H. Searle, M. D., Chicago; executive, J. H. Foy, Newark; publicity, S. DeWitt Clough, Chicago.

DRUGGISTS' NATIONAL HOME.

The Board of Trustees of the Druggists' National Home are: A. L. Beardsley, Elkhart; W. B. Keeling, Chicago; G. L. Secord, Chicago; C. C. Fitzhugh, Flint, Mich.; Paul J. Mandaback, Chicago. The home at Palmyra, Wis., has been paid for, but a permanent endowment fund for its maintenance is being collected.

ARIZONA ASSOCIATION.

The officers of Arizona Pharmaceutical Association were announced in the November JOURNAL. President A. G. Crouch, in his address, condemned the Cramton Bill, now in Congress, and urged all members of the Association to use their efforts against the measure. He advocated higher education and made a plea for the A. Ph. A. Headquarters, urging all members to subscribe thereto.

Hugh O'Connor, of Portland, Ore., spoke on "Narcotic Law Regulations," and Walter H. Cousins, of Dallas, had for his subject "Why Your Association, Your Board of Pharmacy?" Arizona association has accomplished fine success during its two years of organized effort.

ILLINOIS ASSOCIATION.

The annual meeting of the Executive Committee of the Illinois Pharmaceutical Association was held at the School of Pharmacy of the University of Illinois, in Chicago, on Thursday, November 13th. There was a full attendance of the officers and executive committeemen. Legislative matters were discussed; a budget for 1924–25 was adopted, and the proposed extension of the course in the University of Illinois School of Pharmacy, so as to make the minimum course three years, was endorsed.

It was decided to hold the next annual meeting in Decatur, Illinois, June 16th to 19th inclusive.

KANSAS ASSOCIATION.

Kansas Pharmaceutical Association is aiding the "Buy in Kansas" campaign, which is to develop a greater patronage for Kansas industries. A drug show will again be one of the features of the annual meeting of the Association to be held in Wichita, April 21–23, at the Broadview Hotel.

NORTH CAROLINA'S GREATEST LIVING PHARMACIST.

The *Carolina Journal of Pharmacy* has sent out a question card to every registered pharmacist in North Carolina, asking for a vote on "Who is the greatest living pharmacist in North Carolina?" Only practicing retail pharmacists are to be voted for. While some of us may have an opinion as to what the result will be, the count of ballots will be noted with interest.

TEXAS PHARMACISTS WILL ACQUAINT THE PUBLIC WITH THE SERVICES RENDERED BY PHARMACISTS.

A subscription campaign among Texas pharmacists to acquaint the people of Texas with the services of pharmacists and their ideals has met with good success. The campaign will be concluded December 15th and, six weeks prior, one thousand subscriptions of the fifteen hundred desired have been received by Secretary Walter D. Adams of Texas Pharmaceutical Association. The total subscription will amount to $162,000 and it is expected that more than twice that sum will be expended for advertising in local papers. The amount mentioned, $162,000, carries on an advertising campaign of three years in *Holland's Magazine* and *Farm and Ranch*, having a combined circulation in Texas of over 300,000; one page will appear in each issue of the former and two pages in the latter.

Phases of the drug business will be discussed and the main thought will be the services of the registered pharmacist. Other advertising features are to be part of the campaign. The "booze drug store" will be handled without gloves, but there will be no offense in word, except perhaps to those grossly guilty of unethical practices. It is hoped to inform the public that the druggist is more than a merchant, why the registered pharmacist should be patronized and why the public should be interested in advancing the requirements of those who would practice pharmacy.

P. A. R. D. ANNIVERSARY.

The twenty-sixth Anniversary of the Philadelphia Association of Retail Druggists was

celebrated November 18; nearly 500 members, ladies, and friends were present at the dinner and dance given at McCallister Hotel. The address of the evening was made by C. W. Summerfield, of the Philadelphia Chamber of Commerce. The reports of the officers were most encouraging. The selections of the musical program were well rendered and other entertainment features added to the evening's enjoyment.

AMENDED REGULATIONS OF VIRGINIA BOARD OF PHARMACY.

Secretary A. L. I. Winne advises that the reciprocity regulations of the Virginia Board of Pharmacy have been amended so as to require in addition to a bona fide residence in the state in which applicant is registered a year prior to examination and a year of practice in that state a year subsequent to registration, and the usual satisfactory grades on both practice and theory subjects, that the applicant be a graduate of a school of pharmacy approved by this board.

U. S. ARMY MEDICAL LIBRARY.

According to a report of Surgeon General Ireland there are now 801,887 volumes and pamphlets in the U. S. Army Medical Library. The library has volumes dating back to the earliest periods of medical history and as far as modern medicine is concerned the collection is probably the most complete in the world. A special exhibit is being arranged for the visitors to the Convention of the American Congress on Internal Medicine, to be held in Washington next April.

CENTENARY OF THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

The Centenary of the Medical College of the state of South Carolina, at Charleston, was celebrated during the week of November 12. One of the features of the program was a tableau picturing the history of medicine. The closing scenes presented contributions to pharmacy by Egypt, Greece and Arabia; pharmacy of medieval and modern times. One of the luncheons was under the auspices of the pharmacy department, and participated in by the Dean, the head of the department, Prof. W. H. Zeigler, alumni officers and the student-body. Among the out-of-town visitors were Deans Wortley F. Rudd and Jordan and Chairman of the U. S. P. Revision Committee, E. Fullerton Cook.

Distinguished guests, representatives of various departments of the Government, concerned with medicine and pharmacy, were present at the banquet in the Francis Morton Hotel; among the speakers were the above-mentioned pharmacists.

THE PHARMACIST AND THE LAW.

RESALE PRICE PROTECTION LEGISLATION.

While it is probably impossible to enact a price protection law during the next session of Congress, progress can be made by hearings. Bulletin No. 92 of the National Wholesale Druggists' Association urges the members of this organization to write to Chairman Samuel E. Winslow and other leaders of the House Committee on Interstate and Foreign Commerce and impress on them the importance of granting hearings upon the pending price protection bills as early as practicable during the coming session. There are now pending before the House Committee four bills dealing with the subject of price protection; they differ in certain details and through the hearings the merits will be brought out.

All pharmacists should interest themselves in this and follow the advice given in foregoing paragraph, and act promptly.

PAN-AMERICAN STANDARDS MEETING MAY RAISE METRIC ISSUE.

At its coming session, Congress is to be urged to enact a law establishing metric units of weights and measures in merchandising throughout the United States, after a transition period of 10 years.

Metric advocates are pointing out the importance of the First Pan-American Standardization Conference, which meets in December of this year at Lima, Peru, and which will be attended by many United States delegates. All American republics will participate, and the United States alone is not on the metric basis. Leaders in the metric movement declare that permanent Pan-American standards can only be founded upon the decimal metric system, already employed by the vast majority of civilized nations. They express the hope that the Standardization Conference will pass resolutions urging the United States of

America to adopt metric commodity quantity standards, through Congressional enactment.

The importance of the Pan-American Standardization meeting is expected to direct the attention of our Congress to the necessity for considering world standards. In the meantime, metric advocates in the United States are active. The Metric Association holds its Convention in Washington, D. C., during December, and other organizations favoring the standardization move are coöperating.

Fred A. Britten, Congressman from Illinois and metric leader in the House of Representatives, declares: "I regard the adoption of the metric system of weights and measures by the United States of America as of great importance. Its universal adoption is inevitable."

INTERNATIONAL OPIUM CONFERENCE.

A number of the newspaper headings of articles bearing on the Conference at Geneva, read "War On Opium;" for some of the sessions "Opium War" might have been applicable. Charges and counter-charges embittered earlier sessions of the Conference on Far Eastern opium problems. China charged that if the great powers had not adopted effective measures to reduce opium-smoking in the Far East, such as rationing and the registration of smokers, it was because they did not wish to do so. England charged Japan with attacking the British Government during the discussion over the Japanese proposal that countries exporting opium should recognize the import certificates issued by other countries and furnish opium when the documents declared that the opium was for legitimate purposes.

November 25th there was another outbreak in the Conference, but after many accusations and words almost violent in nature between the Japanese, British and Indian delegates an agreement was reached in principle on the issue which caused the collapse of the first opium Conference. This question concerns the freedom of Japan to import opium and recognition of import certificates by British authorities when Japan transhipps her opium at Hongkong. Despite this accord, however, the first Conference is generally regarded, virtually, as a failure, because it provides no effective system for putting an end to opium-smoking in the Far East. The American plan proposes to accomplish complete suppression of opium-smoking within ten years—a ten per cent. cut each year.

The American proposal declares that to prevent the abuse of drugs "it is necessary to exercise the control of the production of raw opium in such a manner that there will be no surplus available for non-medicinal and non-scientific purposes." The nations therefore are asked to enact laws regulating the production of raw opium and coca leaves which shall prevent the existence of such a surplus.

BOOK NOTICES AND REVIEWS.

PUBLICATION OF BOOK REVIEWS DEFERRED.

On account of the annual index in this issue of the JOURNAL it is necessary to defer the printing of several book reviews, to a succeeding number. The two reviews following have been held over for some time.

Chemical Encyclopedia: A digest of chemistry and chemical industry by C. T. Kingzett, F. I. C., F. C. S., 3d edition. D. Van Nostrand Company, New York, 1924. 606 pp. $8.00.

This volume is larger and more comprehensive than its earlier editions which were originally published under the title, "The Popular Chemical Dictionary."

The aim of the author has been truly accomplished, in his desire to place before the reader an epitomized digest of chemistry, its industrial applications and miscellaneous information concerning principles of allied Technology and Interest.

The manner of treatment of the vast amount of material included renders the work exceptionally valuable to professional chemists, students and manufacturers. It further affords an educational treatise to all desiring information along the particular lines covered by the text.

We can find practically every common or specific chemical and technically related noun, ranging between Abietic Acid and Zymogens, alphabetically arranged.

Chemical Formulae are given where necessary, together with tabular references, and statistics are noted throughout the volume.

The composition of alloys, alcohol volume

and densities, relation of the primary and higher amines, typical analytical and physical constants of oils, fats, waxes, etc., were noted at random among the numerous data readily available.

The subject matter is entirely up-to-date including even technical terms only very recently introduced into scientific terminology such as Vitamines and Insulin.

Aspirin is quoted as an intestinal antiseptic, which therapeutic description does not correspond to prevailing American practice.

Numerous industrial proprietaries of American sources are listed.

Summarily considered, the intrinsic value of this *Encyclopedia* can best be ascertained by inspection or reference.

The book can be readily appreciated as a valuable supplementary reference work in any technical library. In itself, as a compact digest of voluminous technical material, it can very well supersede any number of descriptive texts relating to the various subjects that are treated.

SIMON MENDELSOHN.

Systematic Course in Qualitative Analysis of inorganic and organic substances: with explanatory notes. By Henry W. Schimpf, Ph.G., M.D. Fourth Edition. Revised by Alfred I. Cone, Ph.G., Phar.D. John Wiley & Sons Co., New York, 1924. IX + 201 pp. 6 x 9 Cloth $1.75.

This volume was originally devised and written to meet the initial requirements of the student of Pharmacy. The text represents those essentials of qualitative analytical procedure pertinent to the usual materials of pharmaceutical importance and interest.

Certain abbreviated or "short cut" analytical methods have been deleted from this revision in preference to the classic or theoretical procedures.

Considerable of the omitted data have been replaced by preliminary discussions including Ionization, Law of Mass Action, Bunsen flame reactions, etc.

A chapter is devoted to definitions and general considerations representing a brief review of fundamental principles directly concerned in the scope of the material involved. Group separations are presented in both tabular form and the usual step charts.

This feature is readily commendable for the facilities afforded for any desired reference to the properties of substances subject to separatory manipulations preceding their final separation and subsequent identification.

Occasional instances of reversed grammatical syntax are noted. On page 133, section 153 on citrates, this sentence occurs "Upon heating citrates char." The fact could be better expressed, in the form "citrates char on heating."

The chapter on mass action is briefly but well defined; while nevertheless inadequately demonstrated mathematically.

The equations as given are confusing since certain designated constants represented by K and K^I are simultaneously employed as variables.

For example two constants being K and K^I we find that the ratio of K/K^I is given to be K^I which should have been designated by K^C or any other sign to differentiate it as a third constant.

Physical constants such as the optical rotation or melting points are not included for the differentiation of certain of the carbohydrates or in connection with the identification of stereoptens respectively.

The omission of these factors may, however, be in conformity with the original intentions of the author to restrict the text to essentials only.

On page 149, under the caption "starches" we note the statement, ".....insoluble in cold water but on boiling form a mucilage, which gives a blue color with Iodine." This statement may be erroneously interpreted to indicate that the Iodine reaction is characteristic only to the mucilaginous form of starch.

Analytical schemes for the *identification of iron scale salts, detection of poisons* and *uranalysis* are included. The notes on microscopic examination of urinary sediments could be rendered more valuable by the addition of a few illustrations showing examples of epithelium, crystalline matter, blood discs, casts, etc.

The last chapter consists of numerous formulae for the preparation of reagents. The index is efficiently arranged.

The text is surrounded by liberal margins suggestive to the addition of supplementary notations by the student.

This volume, despite its limited scope, forms a valuable manual of analytical material and represents an excellent contribution to pharmaceutical literature; its characteristic features warrant it a place in every working technical library.

SIMON MENDELSOHN.

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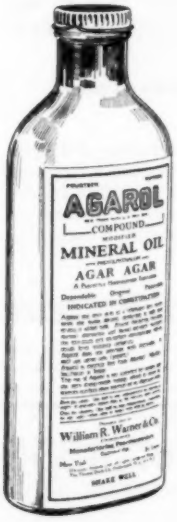

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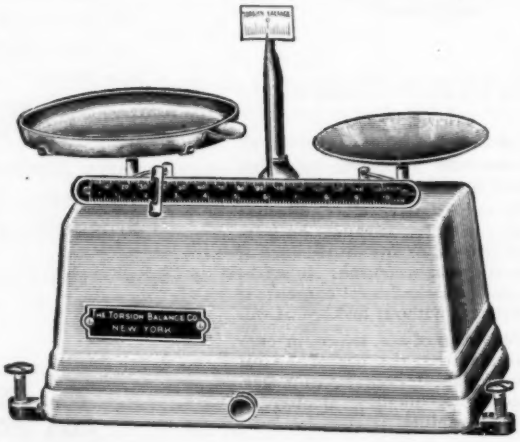

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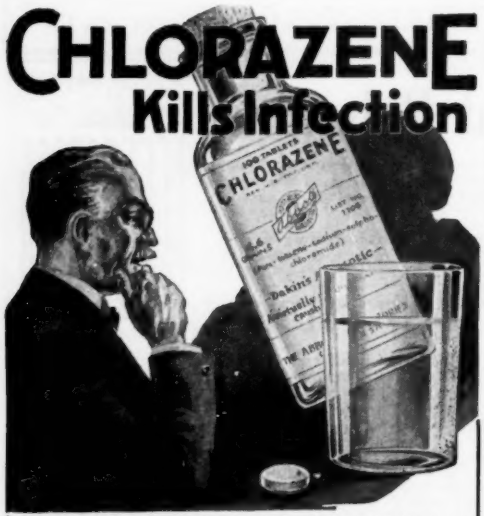

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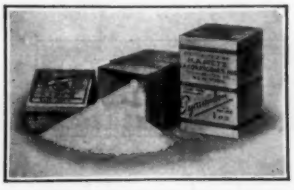

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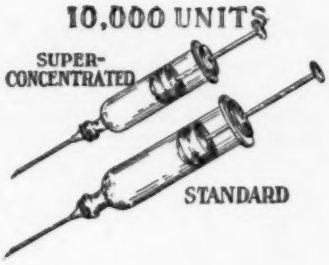

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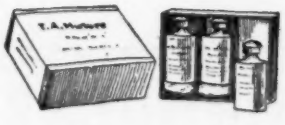

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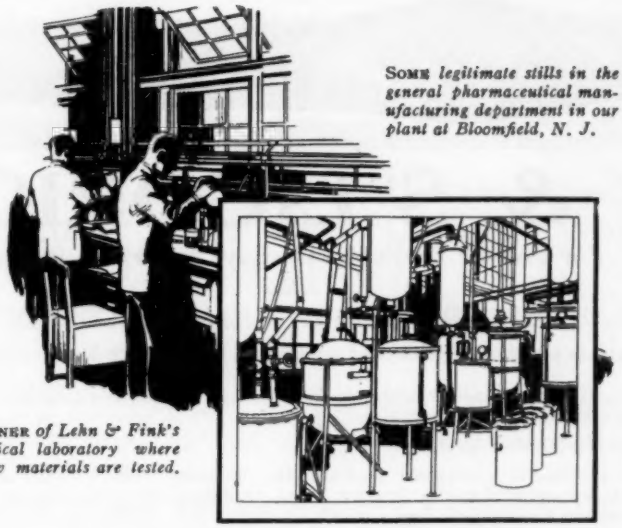

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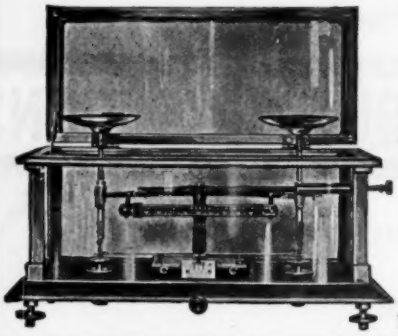

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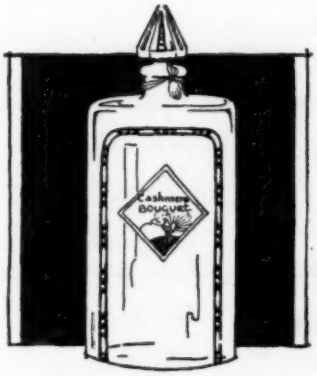

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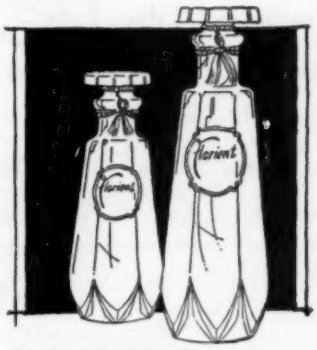

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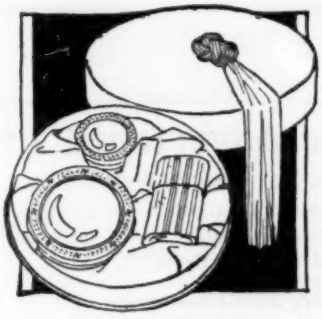

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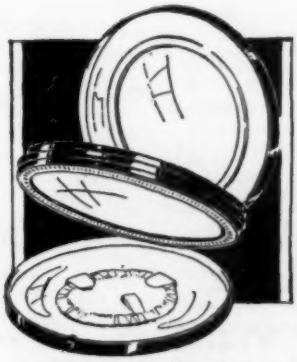

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